# 04 - STRUCTURES INDEX OF DRAWINGS

DRAWING NUMBER	DRAWING TITLE	DRAWING NUMBER	DRAWING TITLE
S-01	INDEX OF DRAWINGS	S-21	ORIGINAL BRIDGE DRAWINGS - 3
S-02	GENERAL PLAN	S-22	ORIGINAL BRIDGE DRAWINGS - 4
S-03	GENERAL NOTES & QUANTITIES	S-23	ORIGINAL BRIDGE DRAWINGS - 5
S-04	LACING BAR AND RIVET REPAIR DETAILS	S-24	ORIGINAL BRIDGE DRAWINGS - 6
S-05	TRUSS ELEVATIONS	S-25	ORIGINAL BRIDGE DRAWINGS - 7
S-06	FRAMING PLAN	S-26	ORIGINAL BRIDGE DRAWINGS - 8
S-07	VERTICAL TRUSS MEMBER REPAIR DETAILS	S-27	ORIGINAL BRIDGE DRAWINGS - 9
S-08	GUSSET REINFORCEMENT DETAILS - 1	S-28	ORIGINAL BRIDGE DRAWINGS - 10
S-09	GUSSET REINFORCEMENT DETAILS - 2	S-29	1984 REHAB BRIDGE DRAWINGS - 1
S-10	GUSSET REINFORCEMENT DETAILS - 3	S-30	1984 REHAB BRIDGE DRAWINGS - 2
S-11	BOTTOM CHORD ANGLE REPAIR DETAILS	S-31	1984 REHAB BRIDGE DRAWINGS - 3
S-12	BOTTOM CHORD BRG. & BEARING REPAIR DETAILS	S-32	1984 REHAB BRIDGE DRAWINGS - 4
S-13	FLOORBEAM WEB REPAIR DETAILS	S-33	1984 REHAB BRIDGE DRAWINGS - 5
S-14	FLOORBEAM WEB REPAIR SUGGESTED SEQUENCE	S-34	1984 REHAB BRIDGE DRAWINGS - 6
S-15	STRINGER WEB REPAIR DETAILS	S-35	1984 REHAB BRIDGE DRAWINGS - 7
S-16	DECK DETAILS		
S-17	DECK REHABILITATION		
S-18	JOINT REHABILITATION		
S-19	ORIGINAL BRIDGE DRAWINGS - 1		
S-20	ORIGINAL BRIDGE DRAWINGS - 2		

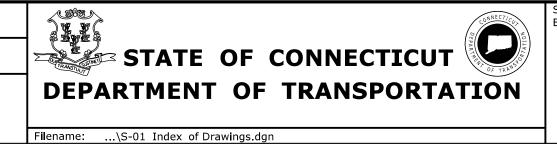


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					THE INFORMATION, INCLUDING ESTIMATED	
					QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED	СН
					INVESTIGATIONS BY THE STATE AND IS	
					IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES	
					OF WORK WHICH WILL BE REQUIRED.	
REV.	DATE	REVISION DESCRIPTION	SHEET	NO.	Plotted Date: 5/28/2014	

REV. DATE

AML

SCALE AS NOTED





**REHABILITATION OF S.R. 816 OVER HOUSATONIC RIVER** BRIDGE NO. 00507

NEWTOW	/N/	SOUTHBURY
DRAWING TITLE:		
INDEX	<b>OE</b>	<b>DRAWINGS</b>

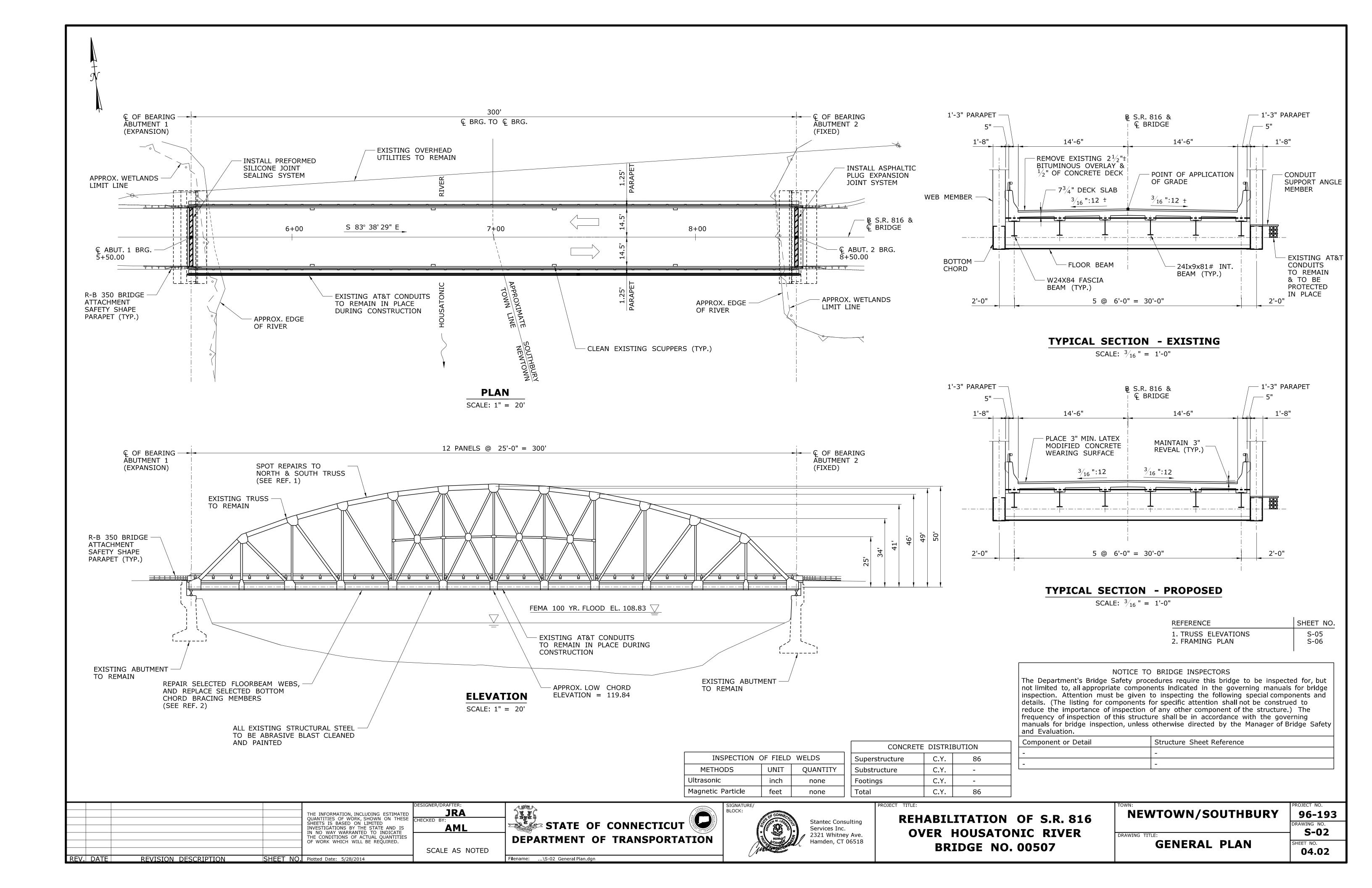
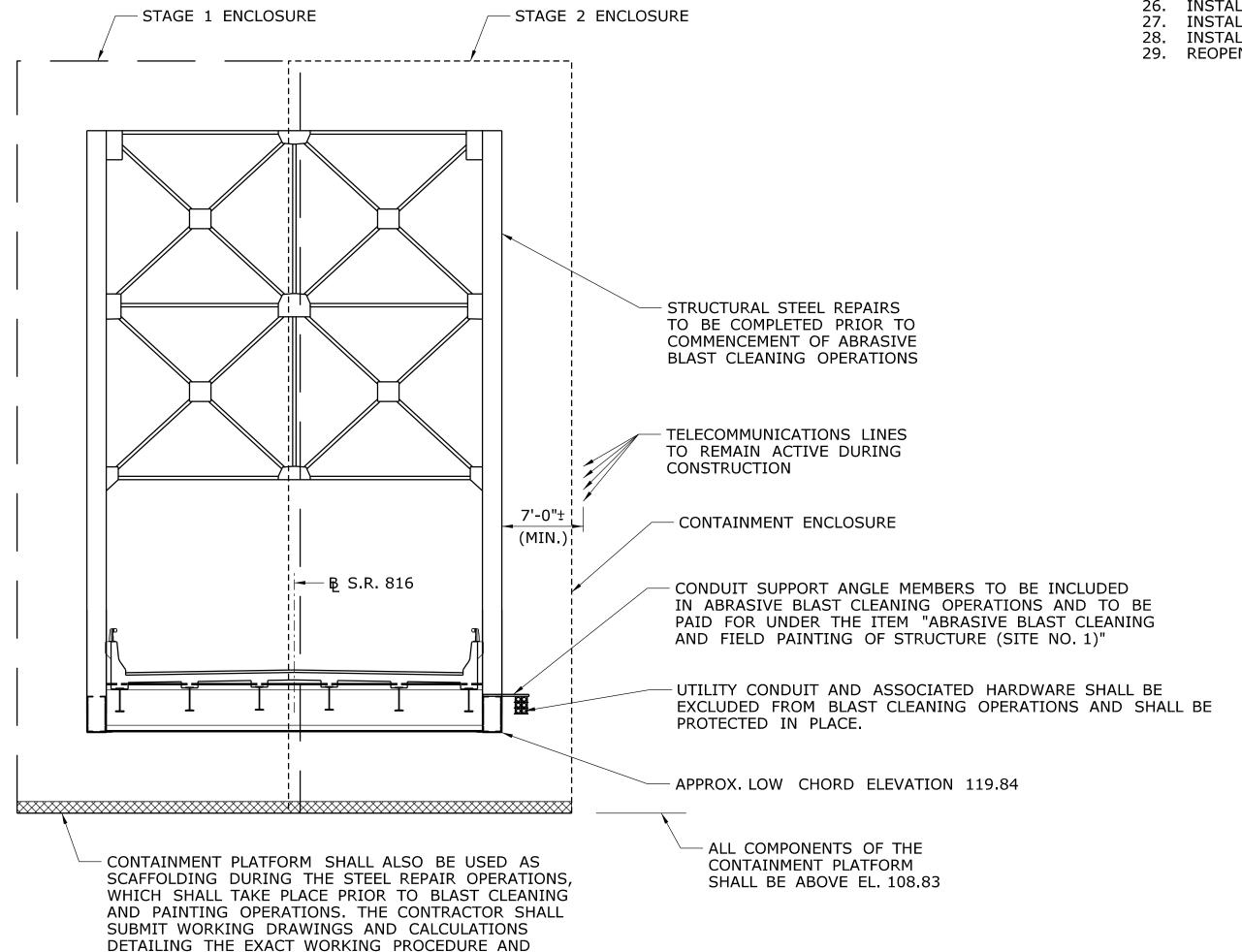
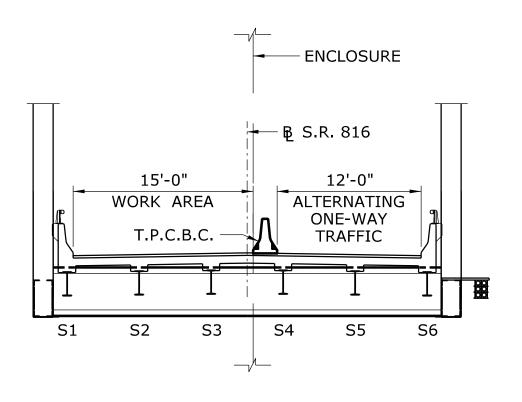


TABLE OF BRIDGE QUANTITIES		
ITEM	UNIT	QUANTITY
LEAD COMPLIANCE FOR MISCELLANEOUS EXTERIOR TASKS	LS	LS
LEAD COMPLIANCE FOR ABRASIVE BLAST CLEANING	LS	LS
REMOVAL OF HMA WEARING SURFACE	SY	984
CLEAN EXISTING SCUPPERS	EA	8
ASPHALTIC PLUG EXPANSION JOINT SYSTEM	CF	12
PREFORMED SILICONE JOINT SEALING SYSTEM	LF	29
CLEAN AND LUBRICATE EXISTING BEARINGS	EA	2
LATEX MODIFIED CONCRETE	CY	86
PARTIAL DEPTH PATCH	CF	74
DRILLING HOLES AND GROUTING ANCHOR BOLTS	EA	8
BOLT AND RIVET REPLACEMENT	EA	1250
DISPOSAL OF LEAD DEBRIS FROM ABRASIVE BLAST CLEANING (SITE NO. 1)	TON	10
TEMPORARY SUPPORT ASSEMBLY	EA	37
CLASS 1 CONTAINMENT AND COLLECTION OF SURFACE PREPARATION DEBRIS (SITE NO. 1)	LS	LS
STRUCTURAL STEEL	LB	53000
ABRASIVE BLAST CLEANING AND FIELD PAINTING OF STRUCTURE (SITE NO. 1)	LS	LS

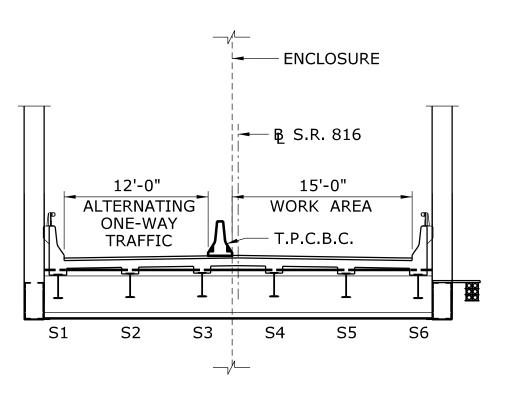


#### SUGGESTED SEQUENCE OF CONSTRUCTION

- ESTABLISH STAGE 1 ALTERNATING ONE-WAY TRAFFIC OPERATIONS. INSTALL CONTAINMENT PLATFORM/TEMPORARY WORK PLATFORM UNDER BRIDGE.
- INSTALL RETROFIT CHANNELS AT L2-U2 & L10-U10 NORTH TRUSS.
- REPLACE DETERIORATED NORTH TRUSS RIVETS AND LACING BARS PER CRITERIA INDICATED ON REF. 4.
- REPAIR NORTH END OF FLOORBEAMS, AND STRINGERS S1, S2, & S3 AS
- INDICATED ON REF. 1.
- REPLACE DETERIORATED LATERAL BRACING MEMBERS AS INDICATED ON DRAWING REF. 5.
- INSTALL GUSSET PLATE REINFORCEMENT AT NORTH TRUSS.
- ERECT CONTAINMENT ENCLOSURE FOR NORTH HALF OF BRIDGE. ABRASIVE BLAST CLEAN NORTH HALF OF BRIDGE.
- PROVIDE STEEL REPAIRS TO DETERIORATED STEEL ENCOUNTERED DURING BLAST CLEANING OPERATIONS.
- PAINT NORTH HALF OF BRIDGE
- REMOVE CONTAINMENT ENCLOSURE
- ESTABLISH STAGE 2 ALTERNATING ONE-WAY TRAFFIC OPERATIONS. INSTALL RETROFIT CHANNELS AT L2-U2 & L10-U10 SOUTH TRUSS.
- REPLACE DETERIORATED SOUTH TRUSS RIVETS AND LACING BARS PER
- CRITERIA INDICATED ON REF. 4.
- 16. REPAIR SOUTH END OF FLOORBEAMS, AND STRINGERS S4, S5, & S6 AS INDICATED ON REF. 1.
- 17. ERECT CONTAINMENT ENCLOSURE FOR SOUTH HALF OF BRIDGE.
- 18. ABRASIVE BLAST CLEAN SOUTH HALF OF BRIDGE. 19. PROVIDE STEEL REPAIRS TO DETERIORATED STEEL ENCOUNTERED DURING BLAST CLEANING OPERATIONS.
- PAINT SOUTH HALF OF BRIDGE
- REMOVE CONTAINMENT ENCLOSURE
- CLOSE BRIDGE TO TRAFFIC AND ESTABLISH DETOUR.
- REMOVE EXISTING HMA WEARING SURFACE FROM BRIDGE DECK AND APPROACHES.
- REPAIR DETERIORATED PORTIONS OF DECK WITH PARTIAL DEPTH PATCH.
- INSTALL LATEX MODIFIED CONCRETE OVERLAY.
- INSTALL ROADWAY EXPANSION JOINTS. INSTALL NEW R-B 350 BRIDGE ATTACHMENTS.
- INSTALL FINAL PAVEMENT MARKINGS.
- 29. REOPEN BRIDGE TO TRAFFIC.



#### STAGE 1 SCALE: 1/8" - 1'-0"



STAGE 2 SCALE:  $\frac{1}{8}$ " - 1'-0"

#### **GENERAL NOTES:**

SPECIFICATIONS: CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816 (2004), SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 2014 AND SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: LRFD BRIDGE DESIGN SPECIFICATIONS (AASHTO - 2012), WITH INTERIM REVISIONS UP TO AND INCLUDING 2013, AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003).

#### DESIGN CRITERIA:

CLASS "A" CONCRETE: BASED ON f'c = 3,000 PSICLASS "F" CONCRETE: BASED ON f'c = 4,000 PSI

THE SPECIFIED CONCRETE STRENGTH USED IN DESIGN, f'c, OF THE CONCRETE COMPONENTS IS NOTED ABOVE. THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE IN THE CONSTRUCTED COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF "SECTION 6.01 CONCRETE FOR STRUCTURES."

REINFORCEMENT: BASED ON Fy = 60,000 PSI

(ASTM A615 GRADE 60)

STRUCTURAL STEEL: BASED ON Fy = 50,000 PSI(AASHTO M270 GRADE 50 WT2)

LIVE LOAD: LIVE LOADS IN ACCORDANCE WITH BRIDGE DESIGN MANUAL, AS SUPPLEMENTED BY CE GENERAL MEMORANDUM 11-03 AND 12-01. DESIGN **VEHICLES:** 

DESIGN: HL-93

CT-L73.0; CT-L3S2 LEGAL:

FUTURE PAVING ALLOWANCE: NONE

CT-P76.5; CT-P204; CT-P380; CT-TLC

OVERLAY: THE EXISTING BITUMINOUS CONCRETE OVERLAY SHALL BE REMOVED AND REPLACED WITH LATEX MODIFIED CONCRETE (3" MIN. THICK). THE REMOVAL OF EXISTING OVERLAY SHALL BE PAID FOR UNDER THE ITEM "REMOVAL OF HMA WEARING SURFACE." REMOVING PORTIONS OF THE CONCRETE DECK SURFACE AND PLACING THE NEW OVERLAY SHALL BE PAID FOR UNDER THE ITEM "LATEX MODIFIED CONCRETE."

DIMENSIONS: ALL ELEVATIONS ARE GIVEN IN FEET. WHEN ELEVATIONS ARE GIVEN TO LESS THAN THREE DECIMAL PLACES, THE OMITTED DIGITS SHALL BE ASSUMED TO BE ZEROS.

EXISTING DIMENSIONS: DIMENSIONS AND ELEVATIONS OF THE EXISTING STRUCTURE SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY HAVE BEEN TAKEN FROM THE ORIGINAL DESIGN DRAWINGS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER.

STEEL REPAIR CONTACT SURFACES: THE CLEANING OF EXISTING STEEL AT CONTACT SURFACES OF STEEL REPAIRS SHALL BE INCLUDED IN THE COST OF "ABRASIVE BLASE CLEANING AND FIELD PAINTING OF STRUCTURE (SITE NO. 1)."

JOINT SEAL: SEE SPECIAL PROVISIONS.

#### **PAINTING NOTES:**

- ALL EXISTING AND NEW STEEL SUPERSTRUCTURE ELEMENTS, INCLUDING STRINGERS, FLOORBEANS, TRUSS MEMBERS, LATERAL BRACING MEMBERS, CONNECTION PLATES, BEARING STIFFENERS, AND DIAPHRAGMS, SHALL BE CLEANED AND PAINTED.
- REMOVAL OF EXISTING PAINT SYSTEM, SURFACE PREPARATION OF STEEL AND REPAINTING OF THE BRIDGES SHALL BE INCLUDED IN THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF SUPERSTRUCTURE (SITE NO. 1)".
- CLASS 1 CONTAINMENT SHALL BE PROVIDED TO COLLECT AND CONTAIN DEBRIS RESULTING FROM THE REMOVAL OF COATINGS IN THE PREPARATION OF STEEL SURFACES FOR PAINTING. THIS WORK SHALL BE INCLUDED IN THE ITEM "CLASS 1 CONTAINMENT AND COLLECTION OF SURFACE PREPARATION DEBRIS (SITE NO. 1)".
- 4. ALL CONTAINMENT AND COLLECTION OF PAINTING DEBRIS SHALL BE DONE IN STRICT CONFORMANCE WITH CURRENT FEDERAL ENVIRONMENTAL PROTECTION AGENCY AND CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS.
- THE COLOR OF THE TOP COAT ON THE STRUCTURAL STEEL SHALL CONFORM TO THE FEDERAL STANDARD COLOR NUMBER 17178 (SILVER).

REFERENCE	SHEET NO
1. FRAMING PLAN	S-06
2. VERTICAL MEMBER REPAIR	S-07
3. GUSSET REINFORCEMENT DETAILS - 1	S-08
4. LACING BAR & RIVET REPAIR	S-04
5. BOTTOM CHORD BRACING REPAIR	S-12

#### **CONTAINMENT SYSTEM**

EQUIPMENT TO BE USED FOR REVIEW BY THE

BE INCLUDED FOR PAYMENT UNDER THE ITEM

PREPARATION DEBRIS (SITE NO. 1)"

ENGINEER. SCAFFOLDING AND OTHER TEMPORARY ACCESS NECESSARY FOR STEEL REPAIR WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL

NOT TO SCALE

"CLASS 1 CONTAINMENT AND COLLECTION OF SURFACE

**JRA** THE INFORMATION, INCLUDING ESTIMATED **AML** 

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION



**REHABILITATION OF S.R. 816 OVER HOUSATONIC RIVER** 

**NEWTOWN/SOUTHBURY** 

**GENERAL NOTES & QUANTITIES** 

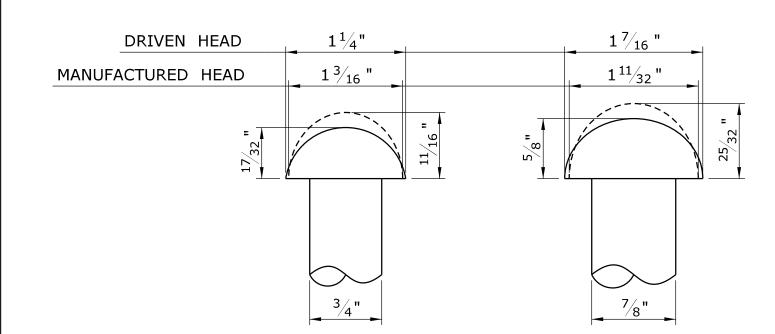
RAWING NO. **S-03** 04.03

96-193

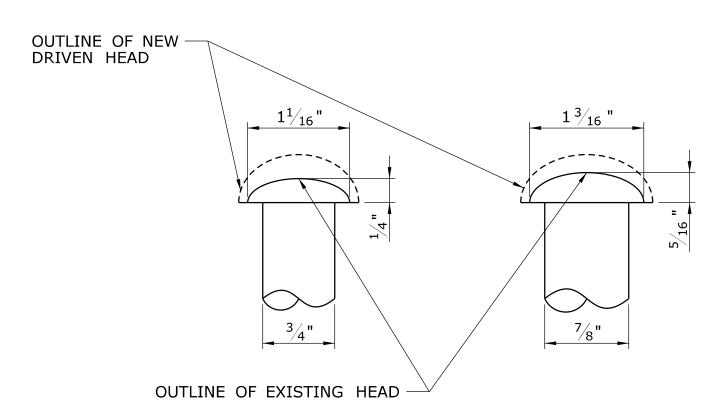
QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. SCALE AS NOTED REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 5/28/2014

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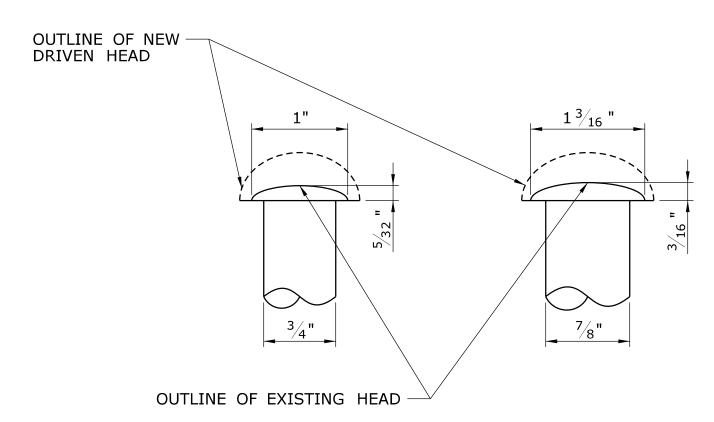
**BRIDGE NO. 00507** 



#### CONDITION A - ORIGINAL RIVET



CONDITION B - MINIMUM UNCONDITIONALLY ACCEPTABLE



REVISION DESCRIPTION

REV. DATE

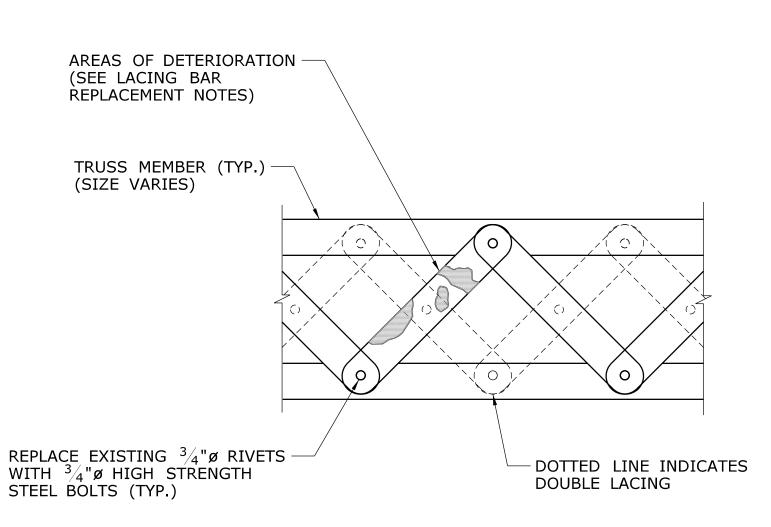
<u> CONDITION C - MINIMUM</u> CONDITIONALLY ACCEPTABLE

#### RIVET REPLACEMENT CRITERIA

SCALE: 12" = 1'-0"

#### **RIVET REPLACEMENT NOTES:**

- 1. RIVETS REMOVED TO PERMIT REPLACEMENT OF TRUSS MEMBERS, FLOOR BEAMS, GUSSET PLATES, BATTEN PLATES OR LACING BARS SHALL BE PAID FOR UNDER THE APPLICABLE ITEMS. THE COST OF REPLACING INDIVIDUAL DETERIORATED RIVETS IN ACCORDANCE WITH THIS SHEET SHALL BE PAID FOR UNDER THE ITEM "BOLT AND RIVET REPLACEMENT."
- 2. AFTER CLEANING OF THE STEEL, ACCESS SHALL BE PROVIDED BY THE CONTRACTOR AND THE ENGINEER NOTIFIED SO THAT HE MAY MAKE A COMPLETE INSPECTION TO DETERMINE WHICH RIVETS REQUIRE REPLACEMENT. DETERIORATED RIVETS NOT COVERED UNDER NOTE 1 ABOVE WILL BE INSPECTED BY THE ENGINEER WHO WILL ORDER THAT SPECIFIC RIVETS SHALL BE REPLACE WITH HIGH STRENGTH BOLTS IN ACCORDANCE WITH THE FOLLOWING GUIDELINES.
- 3. RIVETS (CONDITION B) WITH DIMENSIONS OF BOTH HEADS MEETING OR SURPASSING EACH OF THE MINIMUM DIMENSIONS SHOWN FOR CONDITION B MAY BE LEFT IN PLACE SUBJECT TO CONDITIONS DESCRIBED IN NOTES 6 AND 7.
- 4. RIVETS (CONDITION C) NOT MEETING THE REQUIREMENTS OF CONDITION B, BUT HAVING DIMENSIONS WHICH MEET OR SURPASS AT BOTH HEADS EACH OF THE MINIMUM REQUIREMENTS SHOWN FOR CONDITION C MAY BE LEFT IN PLACE SUBJECT TO THE FOLLOWING CONDITIONS:
  - A) THERE IS NO PRYING ACTION FROM APPLIED STRESS OR CREVICE CORROSION (SEE NOTE 7) WHICH TENDS TO SEPARATE THE CONNECTED PARTS.
  - B) RIVET HEAD DOES NOT HAVE ADDITIONAL LOSSES DESCRIBED IN NOTE 6.
  - C) RIVETS MAY BE LEFT IN PLACE TO THE EXTENT THAT THEIR NUMBER DOES NOT EXCEED 15% OF CONNECTION RIVETS IN ANY ONE CONNECTION OR 40% OF STITCH RIVETS.
  - D) WHERE THE ABOVE PERCENTAGES ARE EXCEEDED THE NUMBER OF RIVETS OVER THE PRESCRIBED PERCENTAGE SHALL BE REPLACED WITH HIGH STRENGTH BOLTS.
  - E) WHEN SELECTING RIVETS FOR REPLACEMENT TO MEET THE ABOVE PERCENTAGE REQUIREMENTS, THE WORST RIVETS IN ANY GROUP OR CONNECTION SHALL BE SELECTED FOR REPLACEMENT.
- 5. RIVETS (CONDITION D) NOT MEETING THE REQUIREMENTS OF CONDITION C AT EITHER HEAD SHALL BE REPLACED (CONDITION D NOT SHOWN).
- 6. REPLACEMENT WILL ALSO BE REQUIRED FOR ANY RIVET EXHIBITING ADDITIONAL LOSS IN THE FORM OF PITS OR GOUGES OF THE EDGE OF EITHER HEAD PROJECTING BEYOND THE SHANK WHERE SUCH LOSS REDUCES THE SECTION BELOW THE LIMITS SHOWN FOR CONDITION B.
- 7. WHERE CREVICE OR INTERFACE CORROSION BETWEEN CONNECTED PARTS IS PRESENT THE RIVETS ADJACENT TO THAT AREA SHALL BE REPLACED AFTER CLEANING BETWEEN THE PARTS REGARDLESS OF THE CONDITION OF THE RIVETS.
- 8. RIVETS REPLACED IN ACCORDANCE WITH NOTES 2 THROUGH 7 WILL BE PAID FOR UNDER THE ITEM "BOLT AND RIVET REPLACEMENT."
- 9. DIMENSIONS SHOWN ON THESE DETAILS FOR CONDITION B AND C ARE MINIMUM REQUIREMENTS FOR BOTH DRIVEN AND MANUFACTURED HEADS. THE MINIMUM HEIGHT OF A RIVET HEAD IS MEASURED TO THE CENTER OF THE RIVET. THE MINIMUM DIAMETER APPLIES TO THAT DIRECTION IN WHICH IT IS THE SMALLEST.
- 10. THE SELECTION AND INSTALLATION OF BOLTS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. FOR EACH BOLT IN THESE ITEMS, A MINIMUM OF TWO WASHERS SHALL BE USED, ONE UNDER EACH HEAD AND NUT. THE CONTRACTOR SHALL TAKE ALL NECESSARY FIELD MEASUREMENTS TO DETERMINE PROPER GRIP LENGTHS.
- 11. RIVETS SHALL BE REMOVED ALTERNATELY, WITH A MAXIMUM OF TWO RIVETS BEING REMOVED AT ONE TIME, SUBJECT TO THE APPROVAL OF THE ENGINEER.
- 12. THE ITEM "BOLT AND RIVET REPLACEMENT" IS INTENDED FOR STAND-ALONE BOLT AND RIVET REPLACEMENTS. THE COST OF REPLACING BOLTS AND RIVETS ASSOCIATED WITH STEEL REPAIRS SHALL BE PAID FOR UNDER "STRUCTURAL STEEL."



**VARIES** 

SINGLE LACING

<sup>3</sup>/<sub>8</sub>" THICK BAR

#### SINGLE/DOUBLE LACING **EXISTING CONDITION**

SCALE:  $1\frac{1}{2}$ " = 1'-0"

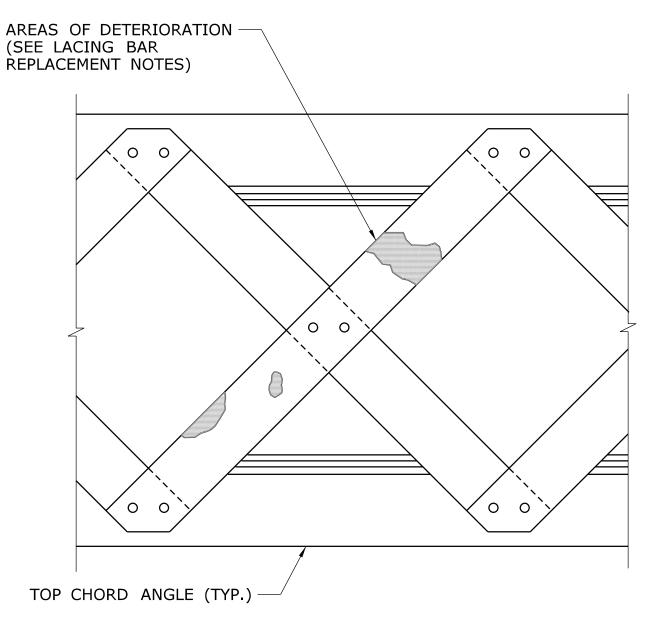
**VARIES** 

DOUBLE LACING

EQUAL

EQUAL

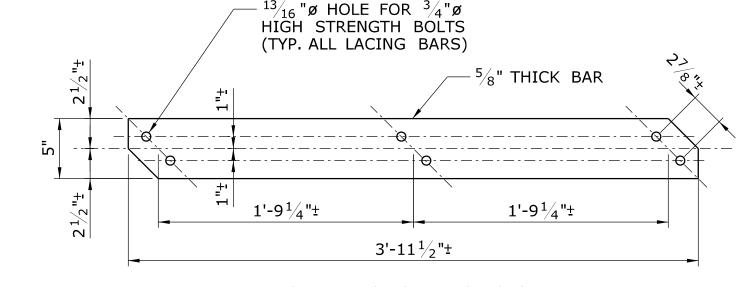
<sup>3</sup>/<sub>8</sub>" THICK BAR



#### DOUBLE LACING AT TOP CHORD

**EXISTING CONDITION** 

SCALE:  $1\frac{1}{2}$ " = 1'-0"



#### LACING BARS

SCALE:  $1\frac{1}{2}$ " = 1'-0"

# DOTTED LINE INDICATES DOUBLE LACING NEW LACING BAR (SIZE VARIES) 0 TRUSS MEMBER (TYP.) NOTE: SIMILAR AT TOP CHORD. (SIZE VARIES)

#### SINGLE/DOUBLE LACING PROPOSED CONDITION

SCALE:  $1\frac{1}{2}$ " = 1'-0"

# DOUBLE LACING AT TOP CHORD

#### LACING BAR REPLACEMENT NOTES:

- 1. LACING BARS SHALL BE REPLACED IF, AT ANY CROSS SECTION, DETERIORATION EXCEEDS 25% OF THE CROSS SECTIONAL AREA OF THE BAR OR THE BAR HAS AN UNSIGHTLY APPEARANCE AS DETERMINED BY THE ENGINEER.
- 2. LACING BARS SHALL BE FABRICATED USING STEEL CONFORMING TO ASTM A709, GRADE 50.
- 3. THE COST OF REPLACING LACING BARS SHALL BE INCLUDED IN THE ITEM "STRUCTURAL STEEL." REMOVAL OF EXISTING LACING BARS IS TO BE INCLUDED IN THE GENERAL COST OF THE
- 4. RIVETS REPLACED WITH HIGH STRENGTH BOLTS DURING LACING BAR REPLACEMENT SHALL BE INCLUDED FOR PAYMENT UNDER "STRUCTURAL STEEL."
- 5. NEW LACING BARS SHALL BE CONNECTED TO THE TRUSS MEMBER WITH  $\frac{3}{4}$  ø ASTM A325 HIGH STRENGTH BOLTS, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
- 6. ALL CONTACT SURFACES SHALL BE SMOOTH, FREE OF BURRS, NICKS, GOUGES, OIL, OR OTHER COATINGS EXCEPT FOR PAINT. CONTACT SURFACES SHALL NOT BE PAINTED OR SHALL HAVE A CLASS A PRIMER. REMAINING SURFACES MAY BE SHOP OR FIELD PRIMED.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS

IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

SHEET NO. Plotted Date: 5/28/2014

**JRA** AML/SY

SCALE AS NOTED

STATE OF CONNECTICUT **DEPARTMENT OF TRANSPORTATION** 

Filename: ...\S-04 Lacing Bar and Rivet Repair Details.dgn

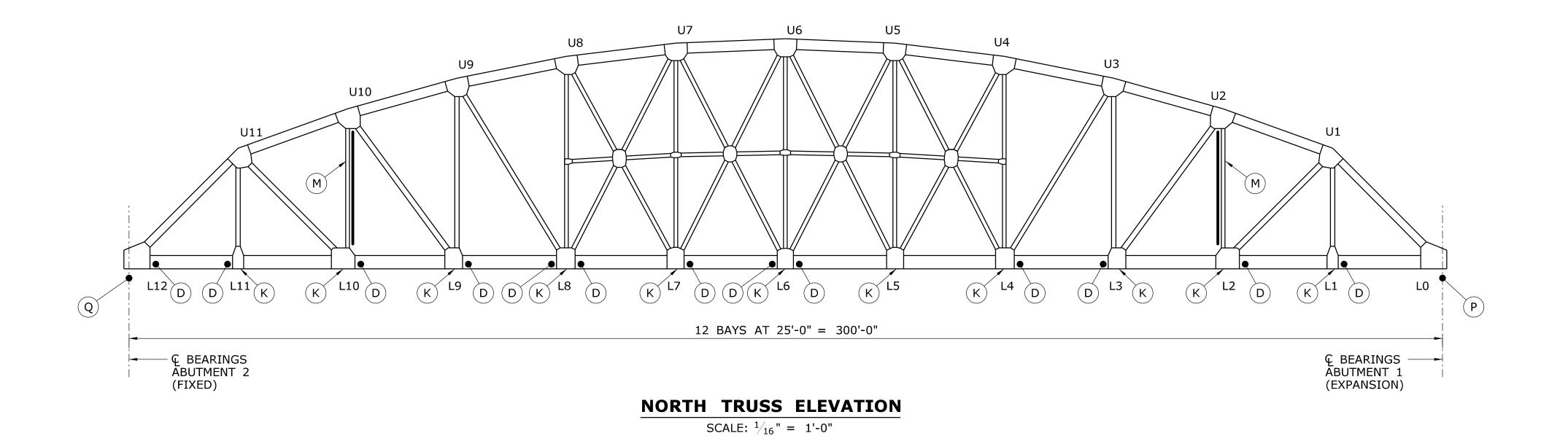


**REHABILITATION OF S.R. 816 OVER HOUSATONIC RIVER BRIDGE NO. 00507** 

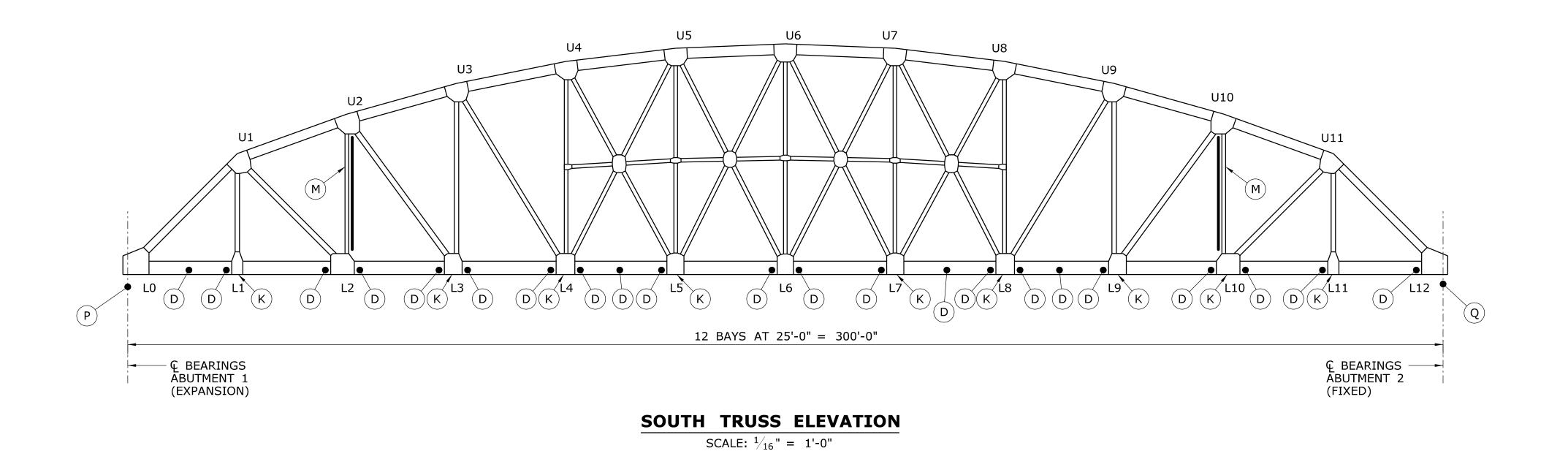
**NEWTOWN/SOUTHBURY** 

RAWING NO. LACING BAR AND RIVET **REPAIR DETAILS** 

**S-04** 04.04



	STEEL REPAIR LEGEND					
DESIGNATION	DESCRIPTION OF WORK	SHEET REF.				
D	REPAIR BOTTOM CHORD ANGLE HORIZONTAL LEG	S-11				
K	INSTALL GUSSET PLATE REINFORCEMENT	S-08 TO S-10				
M	INSTALL RETROFIT CHANNELS	S-07				
P	REPAIR EXPANSION BEARING	S-12				
Q	REPAIR FIXED BEARING	S-12				

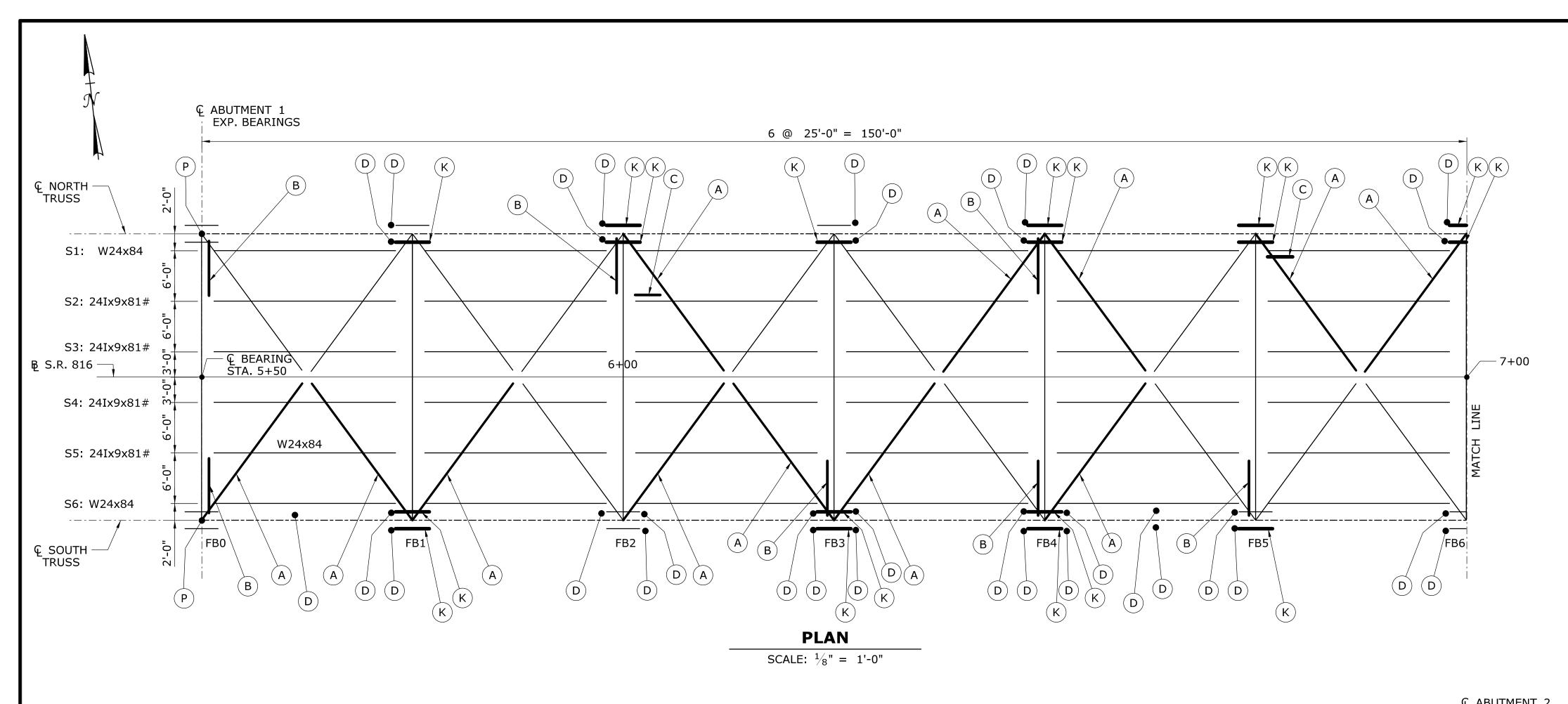


#### **NOTES:**

- 1. THIS DRAWING TO BE READ IN CONJUNCTION WITH REFERENCE 1.
- 2. ABRASIVE BLAST CLEAN AND PAINT ENTIRE SUPERSTRUCTURE, INCLUDING TRUSS, FLOORBEAMS, AND STRINGERS AFTER ALL STEEL REPAIRS HAVE BEEN COMPLETED. CLASS 1 CONTAINMENT SHALL BE UTILIZED DURING BLAST CLEANING AND PAINTING OPERATIONS.
- REPLACE EXISTING DETERIORATED RIVETS WITH NEW H.S. BOLTS. SEE REFERENCE 2 FOR RIVET REPLACEMENT CRITERIA AND OTHER REQUIREMENTS.
- 4. THE COST OF GUSSET PLATE REINFORCEMENT, TRUSS MEMBER REINFORCEMENT, AND BOTTOM CHORD REPAIR SHALL BE INCLUDED IN THE ITEM "STRUCTURAL STEEL".
- 5. THE COST OF REMOVAL AND INSTALLATION OF EXISTING DETERIORATED RIVETS WITH H.S. BOLTS SHALL BE INCLUDED IN THE ITEM "BOLT AND RIVET REPLACEMENT", UNLESS OTHERWISE NOTED.

REFERENCE	SHEET NO
1. FRAMING PLAN	S-06
2. LACING BAR & RIVET REPAIR	S-04

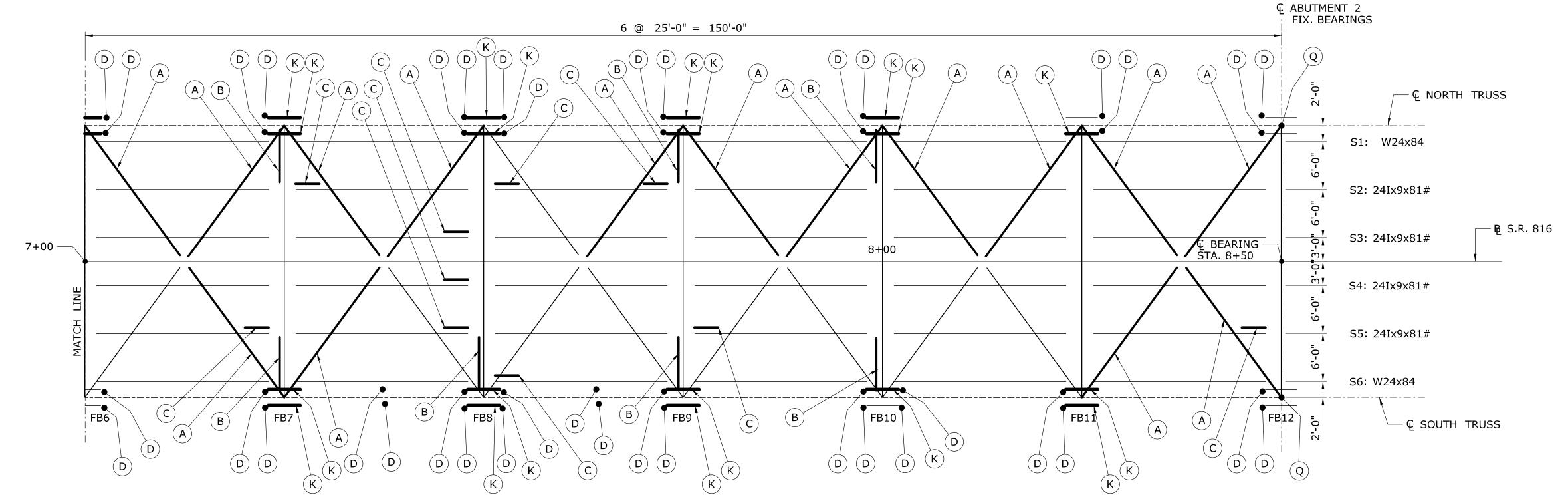
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REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 5/28/2	4	Filename:\S-05 Truss Elevations.dan	] ~			



STEEL REPAIR LEGEND						
DESIGNATION	DESCRIPTION OF WORK	SHEET REF.				
A	REPLACE EXISTING 2L6x4x <sup>3</sup> / <sub>8</sub> LATERAL BRACING WITH WT9X25	S-12				
В	REPAIR FLOORBEAM WEB	S-13				
C	REPAIR STRINGER WEB	S-15				
D	REPAIR BOTTOM CHORD ANGLE HORIZONTAL LEG	S-11				
K	INSTALL GUSSET PLATE REINFORCEMENT	S-08 TO S-10				

#### **NOTES:**

- 1. THIS DRAWING TO BE READ IN CONJUNCTION WITH REFERENCE 1.
- 2. FOR ADDITIONAL NOTES, SEE REFERENCE 1.



REFERENCE SHEET NO.

1. TRUSS ELEVATIONS S-05

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			THE INFORMATION, INCLUDING ESTIMATED	
			QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED	CHE
			INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE	
			THE CONDITIONS OF ACTUAL QUANTITIES	
			OF WORK WHICH WILL BE REQUIRED.	
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DESIGNER/DRAFTER:

JRA

CHECKED BY:

AML/SY

S

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

**PLAN** 

SCALE:  $\frac{1}{8}$ " = 1'-0"

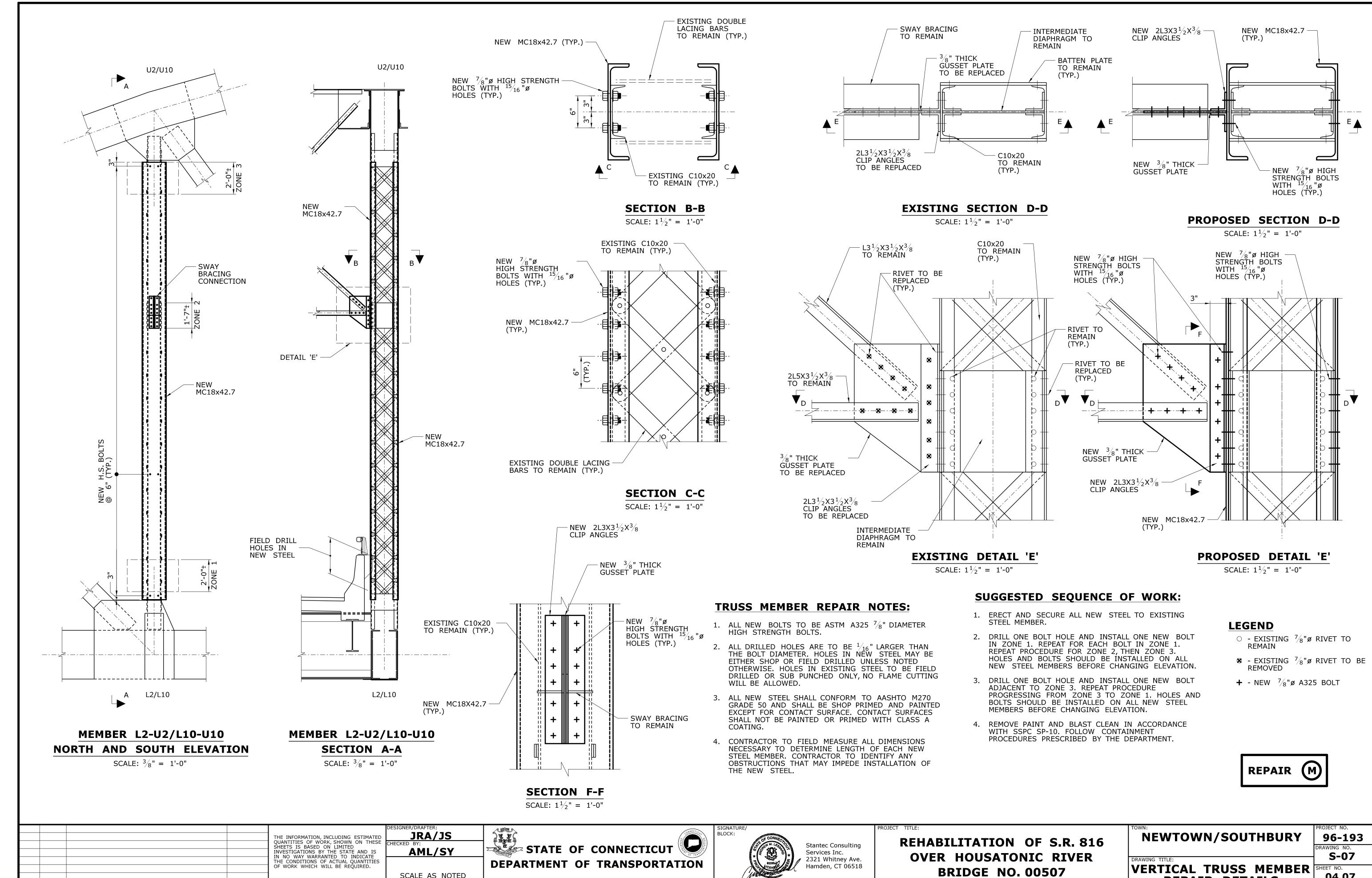
Filename: ...\S-06 Framing Plan.dgn



REHABILITATION OF S.R. 816 OVER HOUSATONIC RIVER BRIDGE NO. 00507

NEWTOWN/SOUTHBURY
DRAWING TITLE:
FRAMING PLAN

96-193
DRAWING NO.
S-06
SHEET NO.
04.06



SCALE AS NOTED

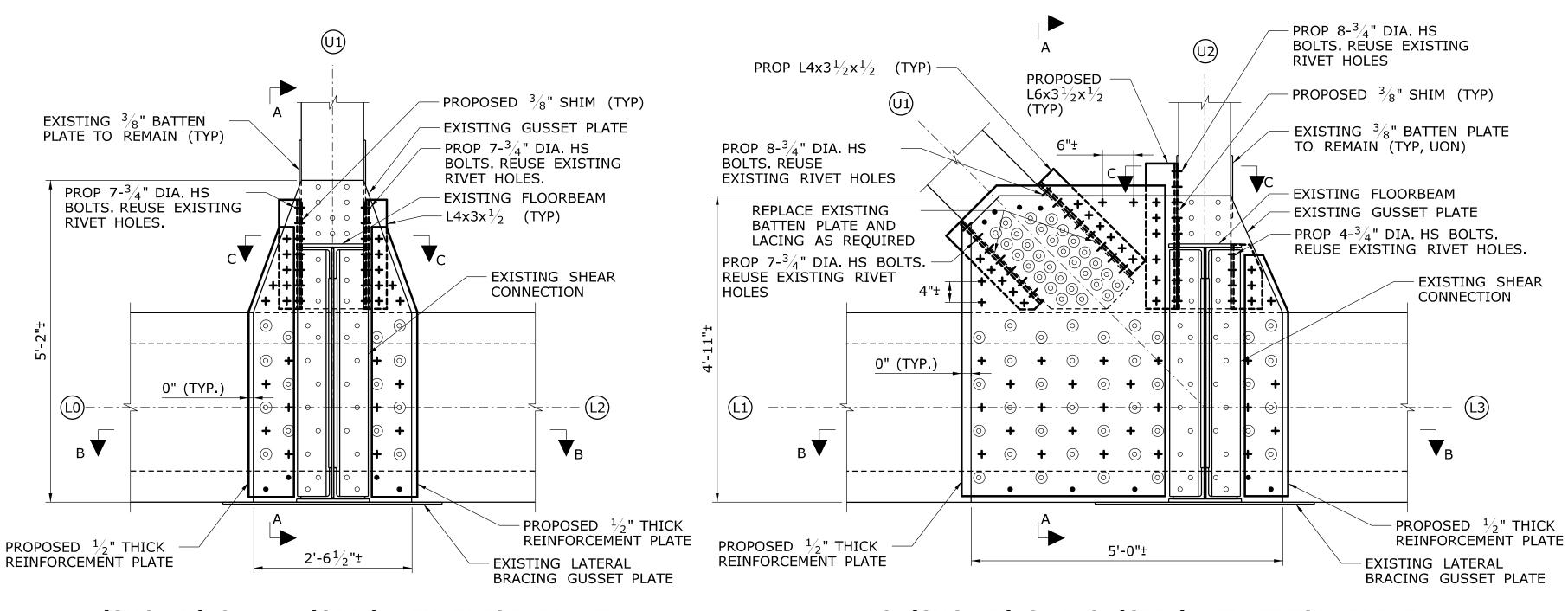
Filename: ...\S-07 Vertical Truss Member Repair Details.dgn

REVISION DESCRIPTION

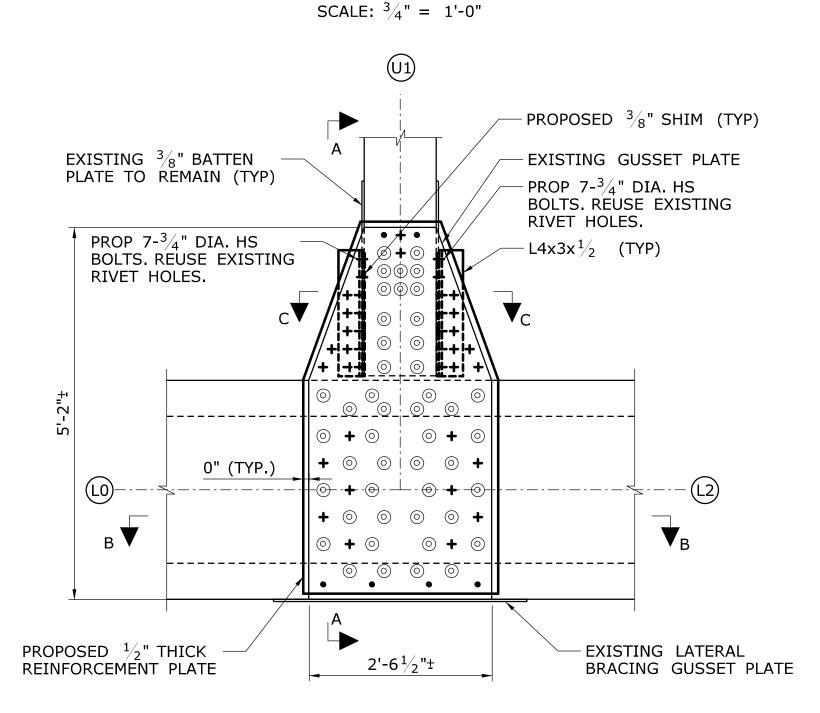
SHEET NO. Plotted Date: 5/28/2014

REV. DATE

VERTICAL TRUSS MEMBER SHEET NO. 04.07 **REPAIR DETAILS** 



#### L1 (SHOWN) & L11 (OPP.) - INTERIOR PLATE



#### L1 (SHOWN) & L11 (OPP.) - EXTERIOR PLATE SCALE: $\frac{3}{4}$ " = 1'-0"

#### **LEGEND**

• - REPLACE  $\frac{7}{8}$ " RIVET WITH  $\frac{7}{8}$ " DIAMETER A325 BOLT THRU EXISTING GUSSET PLATE AND PROPOSED REINFORCEMENT PLATE

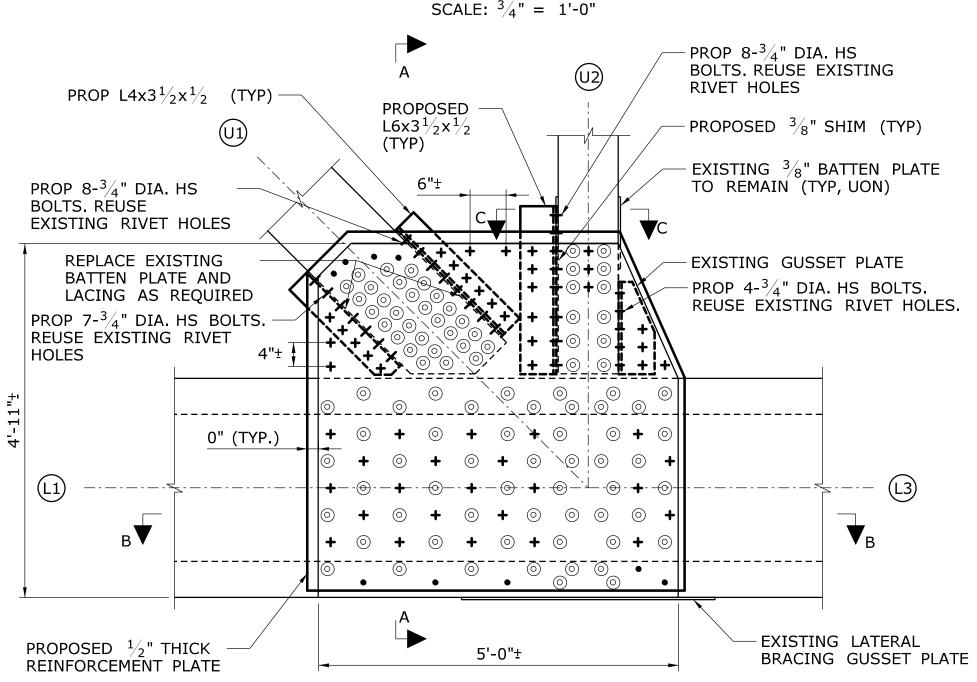
SHEET NO. Plotted Date: 5/28/2014

- ullet NEW  $rac{7}{8}$ " DIAMETER A325 BOLT THRU EXISTING GUSSET PLATE AND PROPOSED REINFORCEMENT PLATE
- $\circ$  EXISTING  $\frac{7}{8}$ " DIAMETER RIVET TO REMAIN
- $\odot$  EXISTING  $^{7}\!/_{\!8}$  DIAMETER RIVET TO REMAIN IN PLACE WITH OVERSIZED HOLE IN PROPOSED REINFORCEMENT PLATE
- (L1) PANEL POINT

REV. DATE

REVISION DESCRIPTION

### L2 (SHOWN) & L10 (OPP.) - INTERIOR PLATE



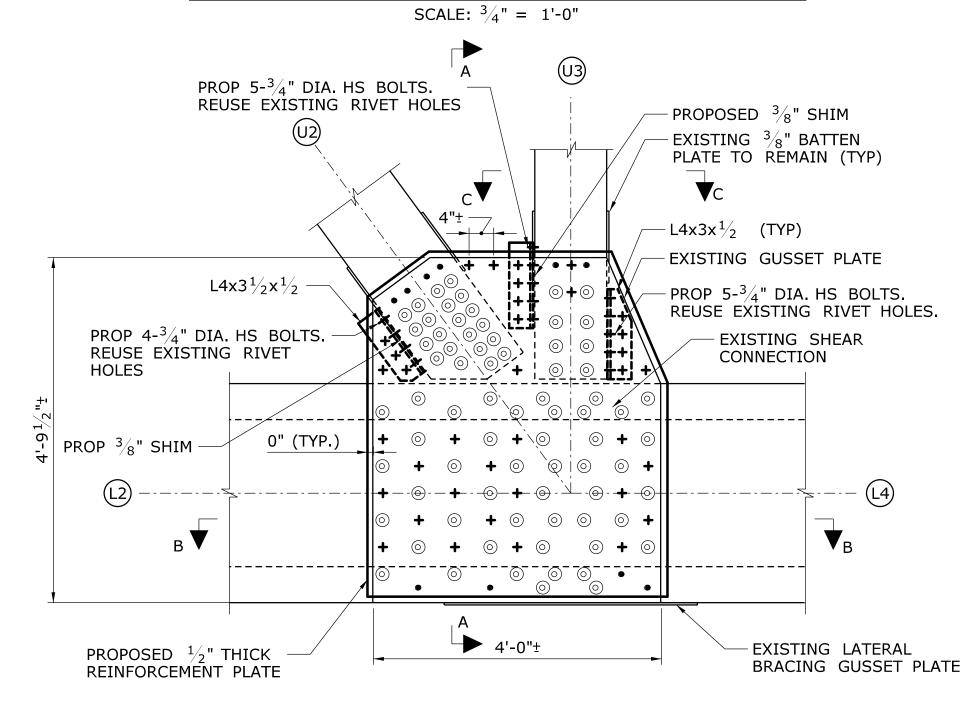
#### L2 (SHOWN) & L10 (OPP.) - EXTERIOR PLATE SCALE: $\frac{3}{4}$ " = 1'-0"

#### **NOTES**

- 1. SEE S-10 FOR NOTES AND SUGGESTED PROCEDURE.
- 2. SEE S-10 FOR SECTIONS A-A, B-B, AND C-C.

#### PROP $5-\frac{3}{4}$ " DIA. HS BOLTS. REUSE EXISTING RIVET HOLES - PROPOSED $\frac{3}{8}$ " SHIM EXISTING 3/8" BATTEN PLATE TO REMAIN (TYP) EXISTING FLOORBEAM $- L4x3x^{1}/_{2}$ (TYP) EXISTING GUSSET PLATE $L4x3\frac{1}{2}x\frac{1}{2}$ PROP $5-\frac{3}{4}$ " DIA. HS BOLTS. REUSE EXISTING RIVET HOLES. PROP $4-\frac{3}{4}$ " DIA. HS BOLTS. EXISTING SHEAR REUSE EXISTING RIVET CONNECTION HOLES 0" (TYP.) PROP 3/8" SHIM ------------PROPOSED $\frac{1}{2}$ " THICK REINFORCEMENT PLATE PROPOSED $\frac{1}{2}$ " THICK REINFORCEMENT PLATE EXISTING LATERAL BRACING GUSSET PLATE

#### L3 (SHOWN) & L9 (OPP.) - INTERIOR PLATE



#### L3 (SHOWN) & L9 (OPP.) - EXTERIOR PLATE SCALE: $\frac{3}{4}$ " = 1'-0"

REFERENCE			SHEET NO.
	REINFORCEMENT REINFORCEMENT		

96-193

**S-08** 

04.08

REPAIR (K)

		THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE	C
		THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	

SY SCALE AS NOTED

STATE OF CONNECTICUT **DEPARTMENT OF TRANSPORTATION** 

Filename: ...\S-08 Gusset Repair - 1.dgn



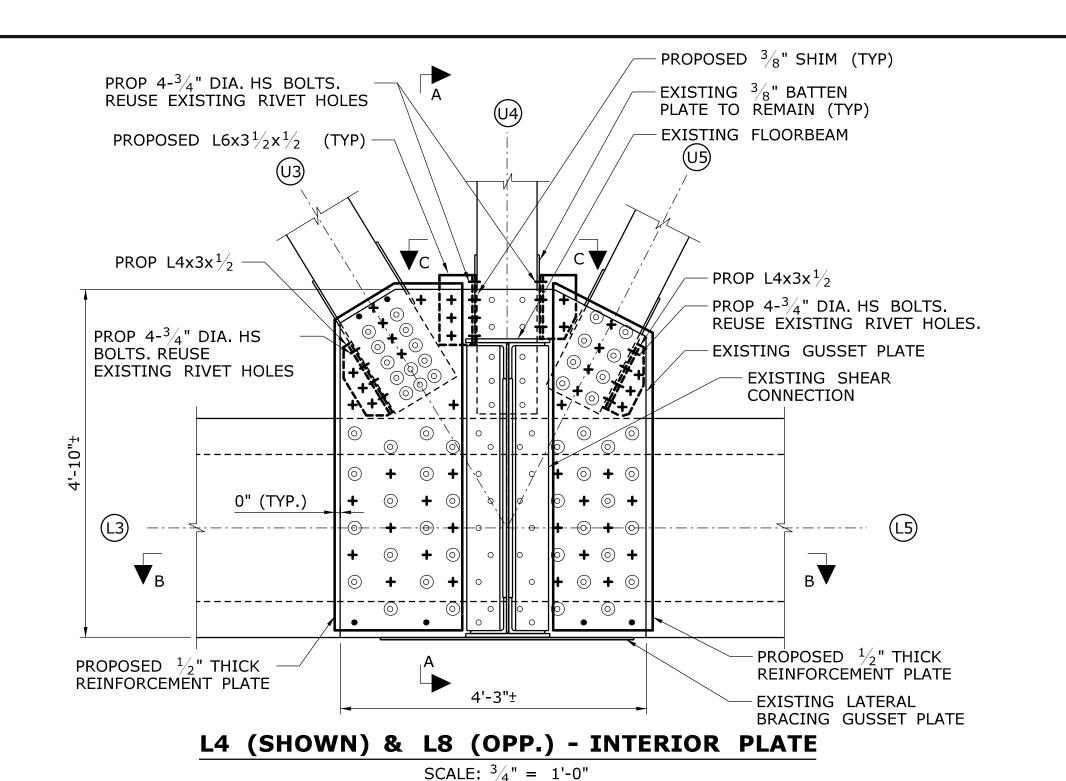
EXISTING SHEAR

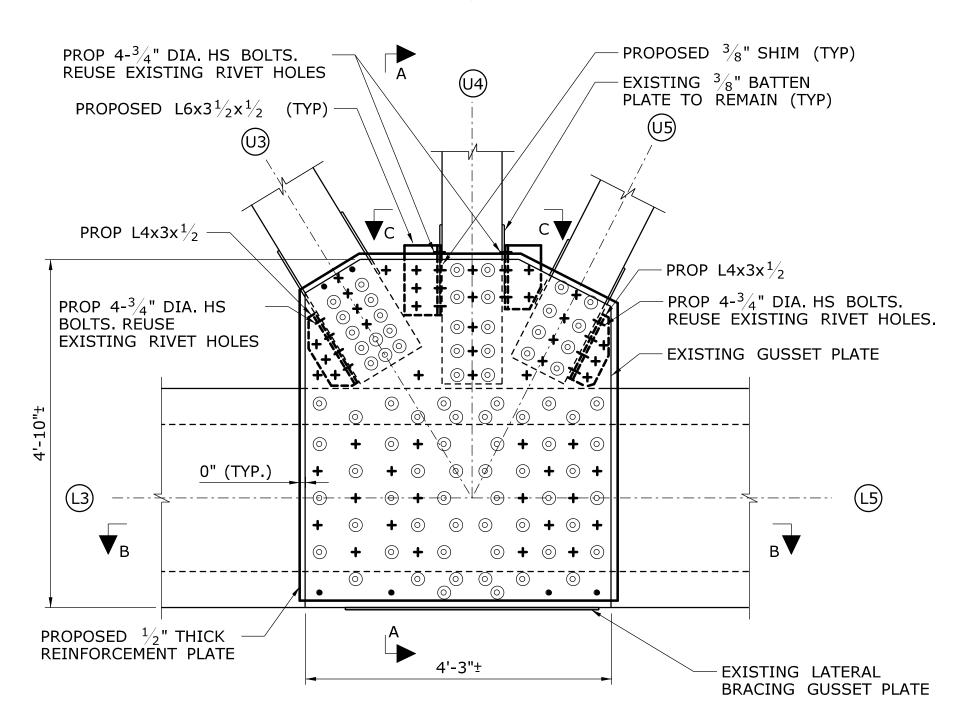
CONNECTION

**REHABILITATION OF S.R. 816 OVER HOUSATONIC RIVER BRIDGE NO. 00507** 

**NEWTOWN/SOUTHBURY** 

**GUSSET REINFORCEMENT DETAILS - 1** 





L4 (SHOWN) & L8 (OPP.) - EXTERIOR PLATE SCALE:  $\frac{3}{4}$ " = 1'-0"

#### **LEGEND**

• - REPLACE  $\frac{7}{8}$ " RIVET WITH  $\frac{7}{8}$ " DIAMETER A325 BOLT THRU EXISTING GUSSET PLATE AND PROPOSED REINFORCEMENT PLATE

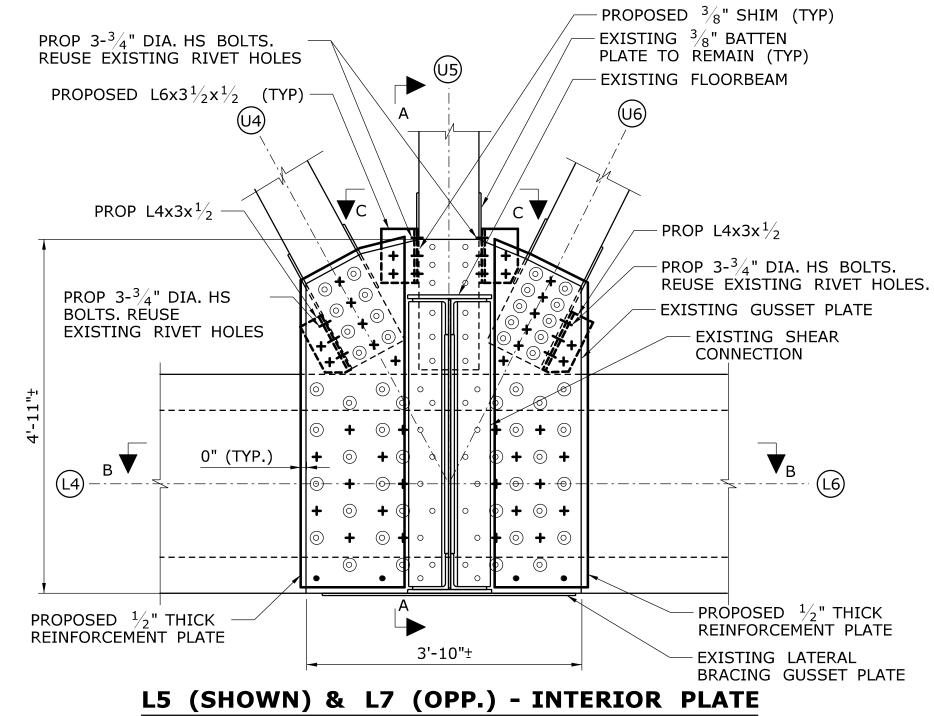
SHEET NO. Plotted Date: 5/28/2014

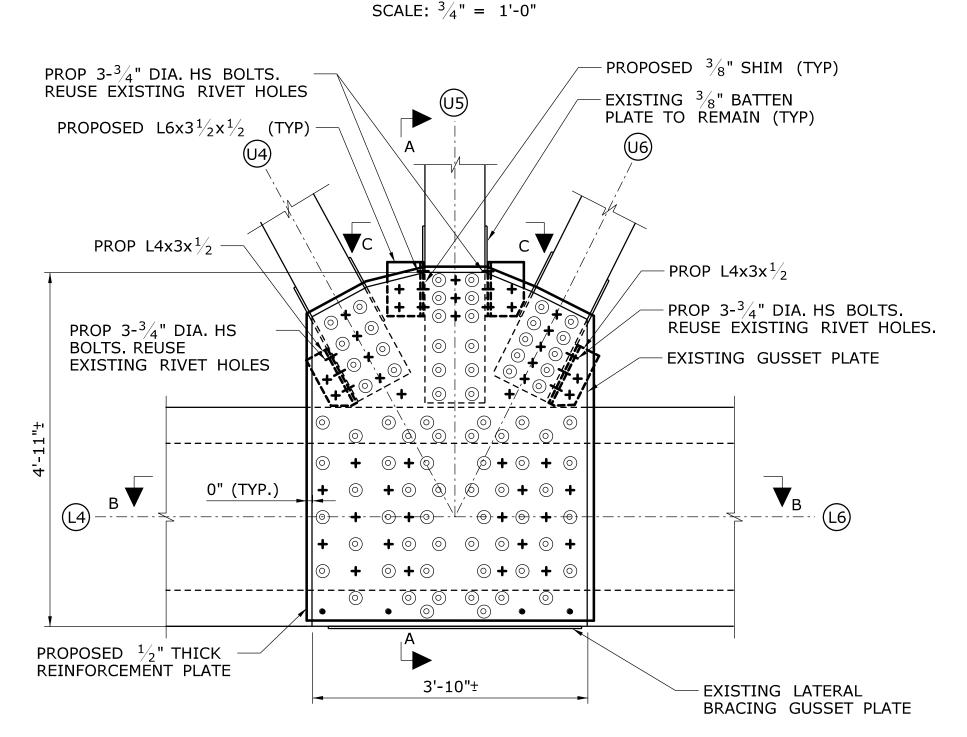
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

- + NEW  $\frac{7}{8}$ " DIAMETER A325 BOLT THRU EXISTING GUSSET PLATE AND PROPOSED REINFORCEMENT PLATE
- $\circ$  EXISTING  $\frac{7}{8}$ " DIAMETER RIVET TO REMAIN
- $\odot$  EXISTING  $^{7}\!/_{\!8}$  DIAMETER RIVET TO REMAIN IN PLACE WITH OVERSIZED HOLE IN PROPOSED REINFORCEMENT PLATE
- (L1) PANEL POINT

REV. DATE

REVISION DESCRIPTION

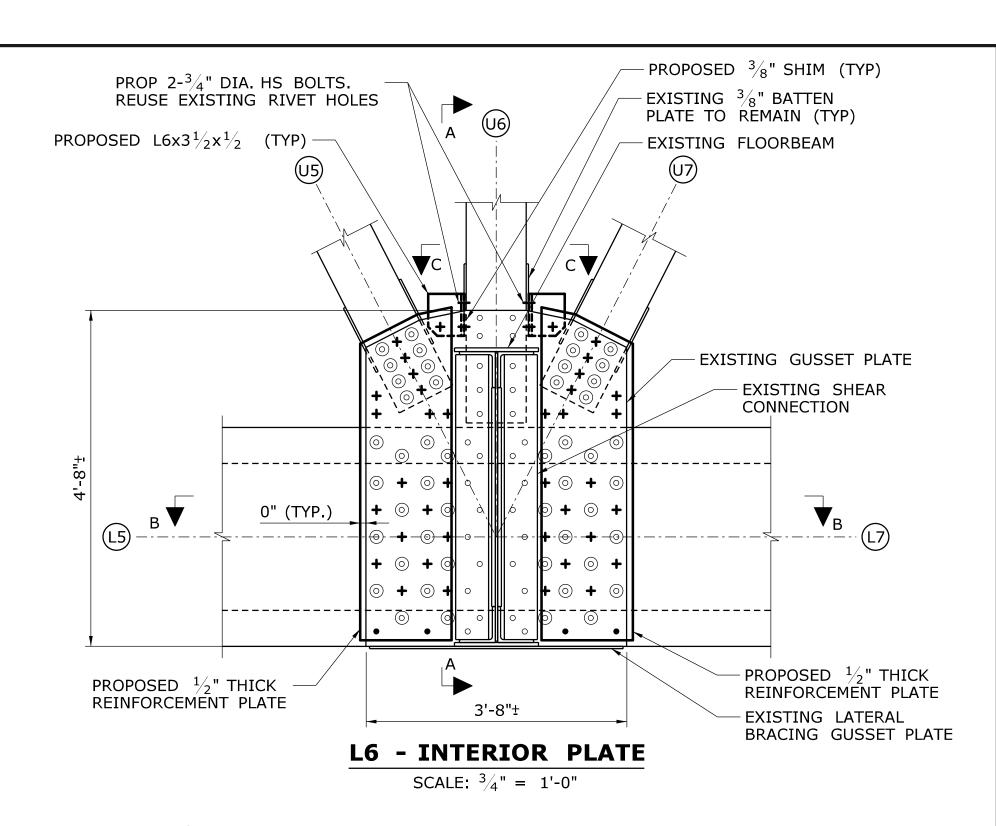


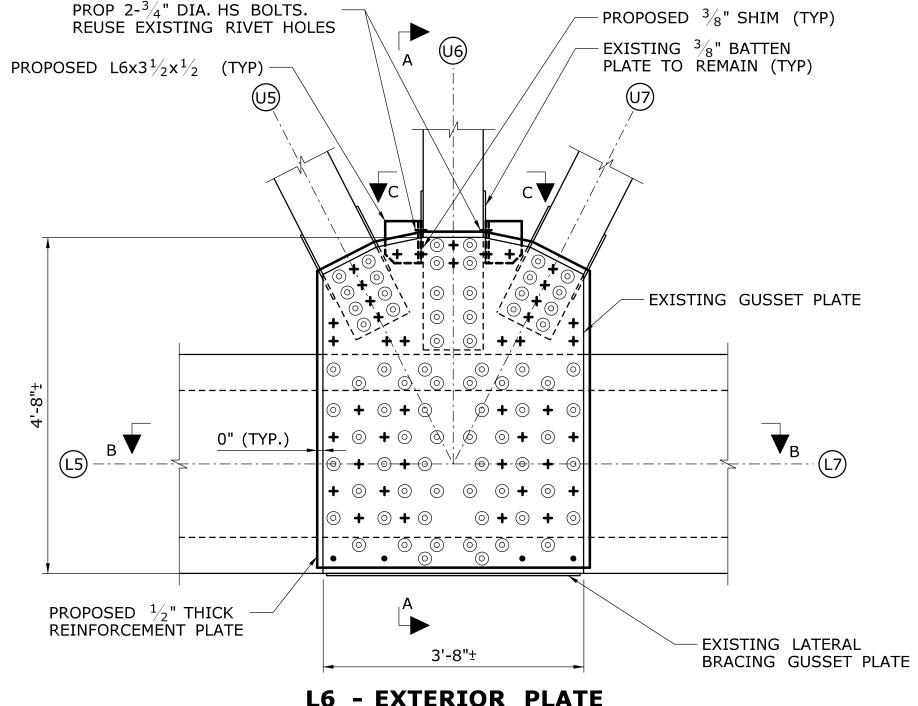


L5 (SHOWN) & L7 (OPP.) - EXTERIOR PLATE SCALE:  $\frac{3}{4}$ " = 1'-0"

#### **NOTES**

- 1. SEE S-10 FOR NOTES AND SUGGESTED PROCEDURE.
- 2. SEE S-10 FOR SECTIONS A-A, B-B, AND C-C.





**L6 - EXTERIOR PLATE** SCALE:  $\frac{3}{4}$ " = 1'-0"

> REFERENCE SHEET NO. 1. GUSSET REINFORCEMENT DETAILS 1 S-08 2. GUSSET REINFORCEMENT DETAILS 3 S-10

> > REPAIR (K)

STATE OF CONNECTICUT

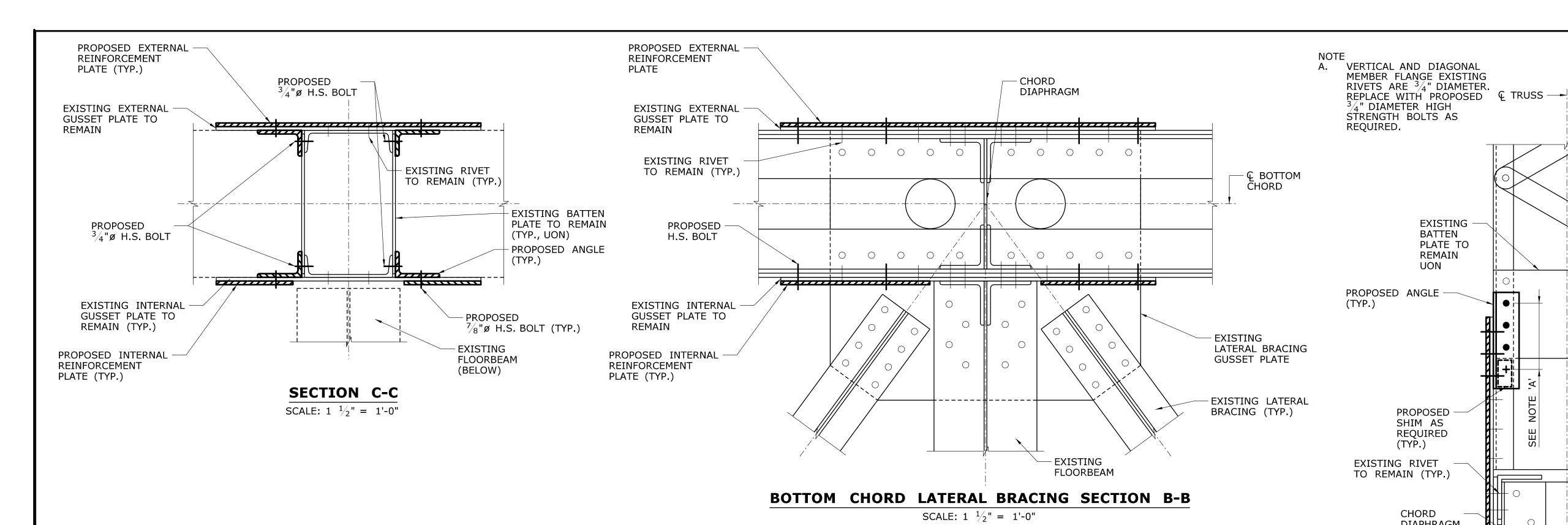


**REHABILITATION OF S.R. 816 OVER HOUSATONIC RIVER** 

**NEWTOWN/SOUTHBURY** 

96-193

SY **S-09 DEPARTMENT OF TRANSPORTATION GUSSET REINFORCEMENT BRIDGE NO. 00507** 04.09 SCALE AS NOTED **DETAILS - 2** Filename: ...\S-09 Gusset Repair - 2.dgn



#### **NOTES:**

- REINFORCEMENT GUSSET PLATES ARE FRACTURE CRITICAL MEMBERS.
- 2. ALL EXISTING RIVETS ARE  $\frac{7}{8}$ " DIAMETER UNLESS OTHERWISE NOTED.
- ALL PROPOSED HIGH STRENGTH BOLTS TO BE ASTM A325,  $\frac{7}{8}$ " DIAMETER UNLESS OTHERWISE NOTED. ALL NUTS SHALL CONFORM TO ASTM A563, TYPE C, AND WASHERS SHALL BE ASTM F436, TYPE 1.
- HOLES FOR NEW HIGH STRENGTH BOLTS SHALL BE DRILLED IN THE FIELD. HOLE SIZE SHALL BE  $^{15}/_{16}$  " DIAMETER FOR  $^{7}/_{8}$  " DIAMETER BOLTS. HOLE SIZE SHALL BE  $^{13}/_{16}$  " DIAMETER FOR  $^{3}/_{4}$  " DIAMETER BOLTS. NO FLAME CUTTING WILL BE ALLOWED.
- 5. ALL BOLTS SHALL BE CLEAN AND LUBRICATED TO INSURE FREE ROTATION OF THE NUT.
- DIMENSIONS SHOWN ON PLANS ARE FOR ESTIMATING PURPOSES ONLY, NEW STEEL PLATE DIMENSIONS SHALL BE DETERMINED BY FIELD MEASUREMENT.
- ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270 GRADE 50 AND SHALL BE SMOOTH, FREE OF BURRS, NICKS, GOUGES, OIL, OR OTHER COATINGS EXCEPT FOR PAINT CONTACT SURFACES SHALL NOT BE PAINTED OR SHALL HAVE A CLASS A PRIMER REMAINING SURFACES MAY BE SHOP OR FIELD PRIMED AND PAINTED.
- REMOVAL OF PAINT AT EXISTING GUSSET PLATES TO BE PAID FOR UNDER "ABRASIVE BLAST CLEANING AND FIELD PAINT OF STRUCTURE (SITE NO. 1)."

#### LEGEND

• - REPLACE  $\frac{7}{8}$ " RIVET WITH  $\frac{7}{8}$ " DIAMETER A325 BOLT THRU EXISTING GUSSET PLATE AND PROPOSED REINFORCEMENT PLATE

SHEET NO. Plotted Date: 5/28/2014

- + NEW  $\frac{7}{8}$ " DIAMETER A325 BOLT THRU EXISTING GUSSET PLATE AND PROPOSED REINFORCEMENT PLATE
- $\circ$  EXISTING  $\frac{7}{8}$ " DIAMETER RIVET TO REMAIN
- $\odot$  EXISTING  $\frac{7}{8}$ " DIAMETER RIVET TO REMAIN IN PLACE WITH OVERSIZED HOLE IN PROPOSED REINFORCEMENT PLATE
- (L1) PANEL POINT

REVISION DESCRIPTION

REV. DATE

#### SUGGESTED GUSSET PLATE REINFORCEMENT PROCEDURE:

- 1. SET-UP
  - WATERWAY NAVIGATION MAY NOT BE OBSTRUCTED OR OTHERWISE INTERFERED WITH AT ANY TIME.
  - THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND CALCULATIONS DETAILING THE EXACT WORKING PROCEDURE AND EQUIPMENT TO BE USED FOR REVIEW BY THE ENGINEER. WORKING DRAWINGS AND CALCULATIONS TO BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF CONNECTICUT.
  - ESTABLISH WORK ZONE TRAFFIC CONTROL AS REQUIRED.
  - THE CONTRACTOR SHALL FIELD VERIFY ALL CONTROLLING DIMENSIONS NECESSARY FOR THE PROPER COMPLETION OF THE WORK, ANY DEVIATIONS FROM THE PROPOSED WORKING PROCEDURE MUST FIRST HAVE THE APPROVAL OF THE ENGINEER.
- IDENTIFY WHICH RIVETS ARE TO BE REPLACED DUE TO DETERIORATION. SEE SHEET S-04.
- REPLACE EACH RIVET WITH A H.S. BOLT, PROPERLY TORQUED.
  - CONTRACTOR'S PROPOSED PROCEDURE FOR REMOVING RIVETS SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF THIS PART OF THE OPERATION. ANY PROCEDURE WHICH HAS THE POTENTIAL TO CAUSE DAMAGE TO THE BASE METAL, SUCH AS BURNING OUT THE SHANK, WILL NOT BE APPROVED.
  - B) ONLY ONE RIVET AT A TIME MAY BE REMOVED.
  - C) THE NEW BOLTS SHALL MATCH IN SIZE THE RIVET OR BOLT THAT THEY REPLACE ( $\frac{7}{8}$ " DIAM.) AND BE ASTM A325 H.S. BOLTS.
- 4. BASED ON EXISTING GUSSET PLATE, CREATE A TEMPLATE OF EXISTING RIVET OR NEW HIGH STRENGTH BOLT LOCATIONS.
- USING THE TEMPLATE, DRILL HOLES OR SUBPUNCH AND REAM IN PROPOSED REINFORCEMENT PLATE.
  - A) ALL HOLES THAT COINCIDE WITH EXISTING RIVETS THAT ARE TO REMAIN IN PLACE OR NEW H.S. BOLTS (SEE STEP 3C) THAT ARE TO REMAIN IN PLACE ARE TO BE MADE LARGE ENOUGH TO ALLOW RIVET/BOLT HEAD TO SIT INSIDE THE HOLE WITHOUT INTERFERENCE, ALLOWING THE PROPOSED REINFORCEMENT PLATE TO SIT FLUSH WITH THE EXISTING GUSSET PLATE.
  - B) ALL HOLES THAT COINCIDE WITH RIVETS THAT ARE TO BE REPLACED WITH HIGH STRENGTH BOLTS (AS INDICATED IN REINFORCEMENT DETAILS, THIS SHEET) ARE TO BE MADE TO A STANDARD HOLE DIAMETER.
  - C) ALL REMAINING HOLES IN THE REINFORCEMENT PLATE SHALL BE STANDARD HOLES TO ACCEPT NEW HIGH STRENGTH
- REMOVE PAINT FROM PROPOSED CONTACT AREA OF EXISTING GUSSET PLATE. CLEAN ALL CORROSION AND RUST FROM THE
- 7. NO MOVING LIVE LOAD SHALL BE PERMITTED IN THE LANE ADJACENT TO THE TRUSS BEING REPAIRED WHILE RIVETS HAVE BEEN REMOVED.
- 8. REMOVE EXISTING RIVETS INDICATED IN REINFORCEMENT DETAIL (SEE REFERENCE 1 AND 2).
- 9. INSTALL REINFORCEMENT PLATE, BEING SURE TO TORQUE NEW BOLTS IN AN EVEN MANNER, FROM THE INSIDE OUT.
- 10. REMOVE EXISTING RIVETS, BATTEN PLATES AND LACING IN VERTICAL MEMBER FLANGES AS REQUIRED. INSTALL PROPOSED ANGLES WITH NEW HIGH STRENGTH BOLTS.
- 11. REPEAT FOR DIAGONAL MEMBER(S). INSTALLATION OF NEW HIGH STRENGTH BOLTS FOR ONE DIAGONAL TO BE COMPLETED BEFORE DEMOLITION OF ADJACENT DIAGONAL
- 12. PAINT BOLTS, REINFORCEMENT PLATE, ETC. AND ANY SURROUNDING DAMAGED AREAS.

			DESIGNER/DRAFTER:
		THE INFORMATION, INCLUDING ESTIMATED	JS
		QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED	
		INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE	SY
		THE CONDITIONS OF ACTUAL QUANTITIES	
		OF WORK WHICH WILL BE REQUIRED.	
			SCALE AS NOTED

ST **DEPARTN** 

Filename: ...\S-10 Gusset Repair - 3.dgn



REFERENCE

EXISTING

REMAIN

UON

**EXISTING** 

PLATE TO

BATTEN

REMAIN

UON

**PROPOSED** 

DIAPHRAGM

PROPOSED EXTERIOR REINFORCEMENT

SHIM AS REQUIRED LACING TO

EXISTING INTERNAL

- PROPOSED INTERIOR REINFORCEMENT PLATE

 $\circ$ 

 $\circ$ 

EXISTING

LATERAL BRACING

SHEET NO.

S-08

GUSSET PLATE

GUSSET PLATE

PROPOSED  $\frac{7}{8}$ "ø

H.S. BOLT (TYP.)

 $\circ$ 

0 0

1. GUSSET REINFORCEMENT DETAILS 1

2. GUSSET REINFORCEMENT DETAILS 2 S-09

SECTION A-A

SCALE:  $1\frac{1}{2}$ " = 1'-0"

0 0

NEWTOWN/SOUTHBURY

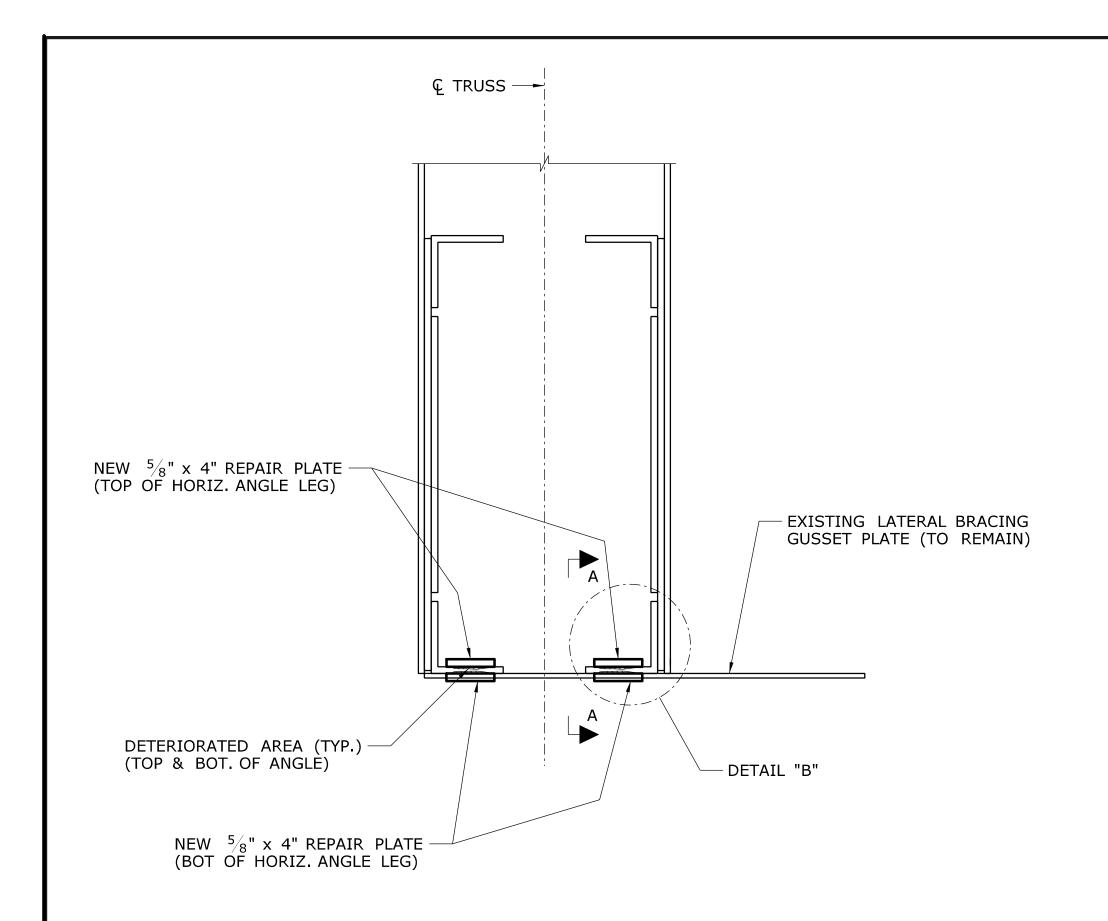
**DETAILS - 3** 

REPAIR (K)

96-193 S-10 **USSET REINFORCEMENT** 04.10

TATE OF CONNECTICUT	Stantec Consulting	REHABILITATION OF S.R. 816	NE
MENT OF TRANSPORTATION	Stantec Consulting Services Inc. 2321 Whitney Ave.	OVER HOUSATONIC RIVER	DRAWING
INLINI OI IRANSPORTATION	Hamden, CT 06518	BRIDGE NO. 00507	GU

PROJECT TITLE



**BOTTOM CHORD ANGLE REPAIR** 

SCALE:  $1\frac{1}{2}$ " = 1'-0"

FILL SIKADUR 31, HI-MOD GEL
OR APPROVED EQUAL
(SEE NOTE 7)

NEW 5/8" x 4" REPAIR PLATE

EXISTING LATERAL BRACING
GUSSET PLATE (TO REMAIN)

DETERIORATED AREA
(TOP & BOT. OF ANGLE)

**DETAIL "B"**SCALE: 3" = 1'-0"

SHEET NO. Plotted Date: 5/28/2014

**SUGGESTED REPAIR PROCEDURE:** 

EXISTING RIVETS TO REMAIN -

EXISTING  $L6x6x^{9}/_{16}$  BOT. CHORD ANGLE

EXISTING LATERAL BRACING

GUSSET PLATE (TO REMAIN)

- .. SET-UP
  - A. WATERWAY NAVIGATION MAY NOT BE OBSTRUCTED OR OTHERWISE INTERFERED WITH AT ANY TIME.

    3. THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND CALCULATIONS DETAILING THE EXACT WORKING PROCEDURE AND EQUIPMENT TO BE USED FOR REVIEW BY THE ENGINEER. WORKING DRAWINGS AND CALCULATIONS ARE TO BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF

REPLACE EXISTING RIVETS

WITH NEW HS BOLTS

- ESTABLISH WORK ZONE TRAFFIC CONTROL AS REQUIRED.
- D. THE CONTRACTOR SHALL FIELD VERIFY ALL CONTROLLING DIMENSIONS NECESSARY FOR THE PROPER COMPLETION OF THE WORK. ANY DEVIATIONS FROM THE NEW WORKING PROCEDURE MUST FIRST HAVE THE APPROVAL OF THE ENGINEER.
- 2. DEMOLITION AND REPAIR ON ONE SINGLE ANGLE TO COMPLETED BEFORE PROGRESSING TO THE NEXT SECTION.
- 3. BASED ON EXISTING LAYOUT OF RIVETS AND BOLTS OF GUSSET AND BATTEN PLATES, CREATE A TEMPLATE OF:

€ FLOORBEAM --

NEW  $\frac{5}{8}$ " x 4" REPAIR PLATE —

- A. NEW PLATE LAYOUT
- B. BOLT HOLES FOR NEW REPAIR PLATES
- 4. DRILL OR SUBPUNCH AND REAM ALL HOLES IN NEW TOP REPAIR PLATE. USE HOLES IN NEW TOP REPAIR PLATE TO CREATE HOLES IN NEW BOTTOM REPAIR PLATE.
- 5. REMOVE PAINT FROM NEW CONTACT AREA OF EXISTING STEEL.
- 6. SUPPORT EXISTING PLATES. REMOVE EXISTING RIVETS.
- 7. INSTALL NEW TOP REPAIR PLATE. ONLY BOLT THRU EXISTING RIVET HOLES.
- 8. USE TOP REPAIR PLATE AS A TEMPLATE TO CREATE HOLES IN HORIZONTAL FLANGE OF EXISTING BOTTOM CHORD BOTTOM ANGLE.
- 9. INSTALL NEW BOTTOM REPAIR PLATE AND REMAINDER OF NEW BOLTS.
- 10. INSTALL FILL MATERIAL.
- 11. PAINT BOLTS, REINFORCEMENT PLATE, ETC. AND ANY SURROUNDING DAMAGED AREAS.

#### **NOTES:**

REPAIR PLATE SIZE VARIES (TO BE FIELD DETERMINED)

NEW HS BOLTS @ 6" —

END OF GUSSET

**SECTION A-A** 

SCALE: 3'' = 1'-0''

1. ALL EXISTING RIVETS ARE  $\frac{7}{8}$ " DIAMETER.

- NEW  $\frac{5}{8}$ " x 4" REPAIR PLATE

DETERIORATION (TYP.)

(TOP & BOT. OF ANGLE)

REPAIR PLATE SIZE VARIES

(TO BE FIELD DETERMINED)

2. ALL PROPOSED HIGH STRENGTH BOLTS TO BE ASTM A325,  $\frac{7}{8}$ " DIAMETER. ALL NUTS SHALL CONFORM TO ASTM A563, TYPE C, AND WASHERS SHALL BE ASTM F436, TYPE 1.

REPLACE EXISTING RIVETS —

WITH NEW HS BOLTS

- 3. HOLES FOR NEW HIGH STRENGTH BOLTS SHALL BE DRILLED IN THE FIELD. HOLE SIZE SHALL BE  $^{15}/_{16}$ " DIAMETER FOR  $^{7}/_{8}$ " DIAMETER BOLTS. NO FLAME CUTTING WILL BE ALLOWED.
- 4. ALL BOLTS SHALL BE CLEAN AND LUBRICATED TO INSURE FREE ROTATION OF THE NUT.
- . DIMENSIONS SHOWN ON PLANS ARE FOR ESTIMATING PURPOSES ONLY.
  NEW STEEL PLATE DIMENSIONS SHALL BE DETERMINED BY FIELD
  MEASUREMENT.
- 6. ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270 GRADE 50 AND SHALL BE SMOOTH, FREE OF BURRS, NICKS, GOUGES, OIL, OR OTHER COATINGS EXCEPT FOR PAINT. CONTACT SURFACES SHALL NOT BE PAINTED OR SHALL HAVE A CLASS A PRIMER. REMAINING SURFACES MAY BE SHOP OR FIELD PRIMED.
- 7. SIKADUR 31, HI-MOD GEL SHALL BE INCLUDED IN THE COST OF "STRUCTURAL STEEL."
- . REMOVAL OF PAINT AT EXISTING STEEL AREAS TO BE PAID FOR UNDER "ABRASIVE BLAST CLEANING AND FIELD OF PAINTING OF STRUCTURE (SITE NO. 1)."

REPAIR D

END OF BATTEN —

-EXISTING BATTEN PLATE

@ 3'-0" ± (TO REMAIN)

← END OF BATTEN

		THE INFORMATION, INCLUDING ESTIMATED
		QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED
		INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE
		THE CONDITIONS OF ACTUAL QUANTITIES
		OF WORK WHICH WILL BE REQUIRED.

REVISION DESCRIPTION

REV. DATE

DESIGNER/DRAFTER:

JRA

CHECKED BY:

SY

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION



REHABILITATION OF S.R. 816 OVER HOUSATONIC RIVER BRIDGE NO. 00507 NEWTOWN/SOUTHBURY

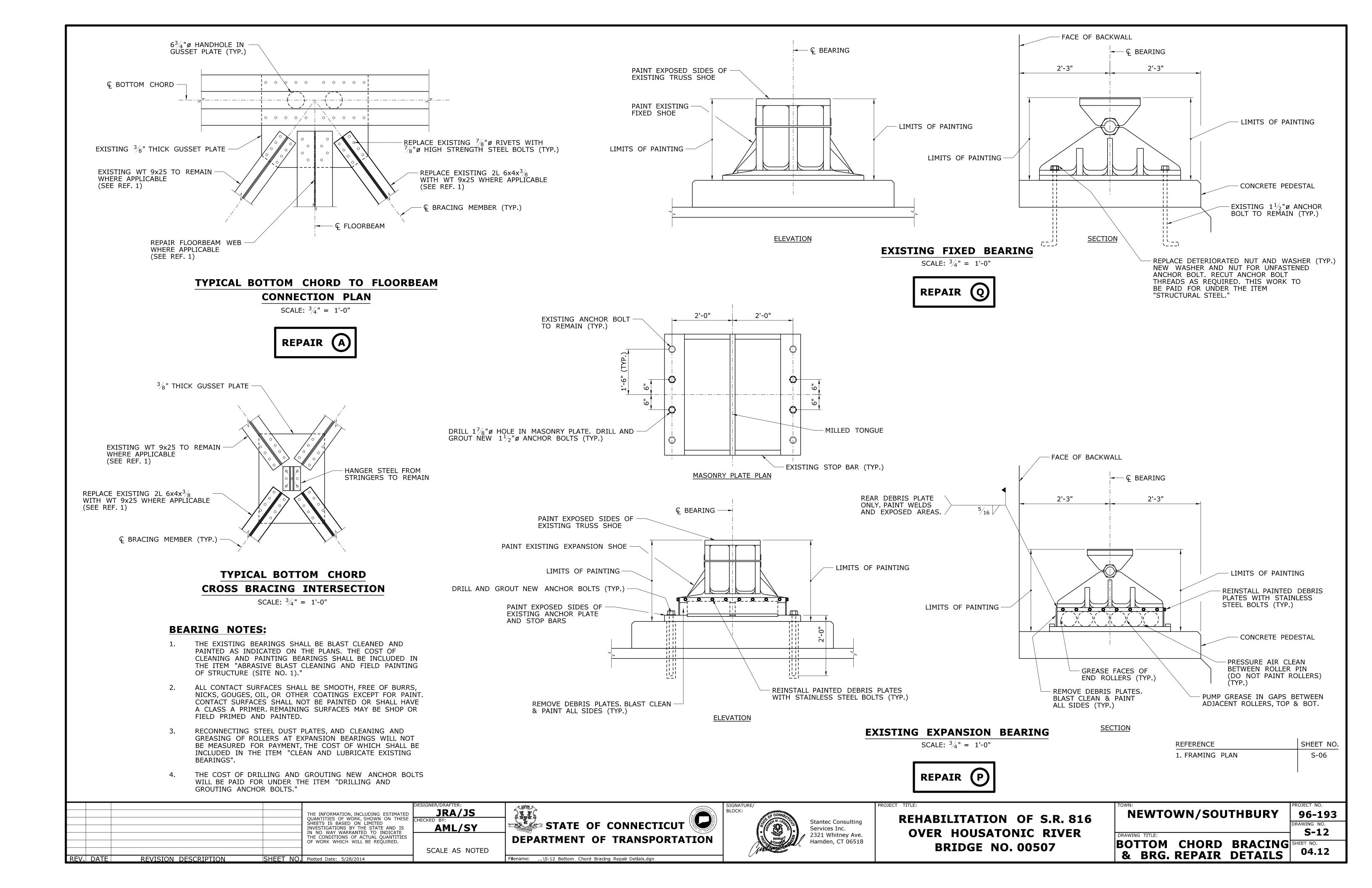
BOTTOM CHORD ANGLE REPAIR DETAILS

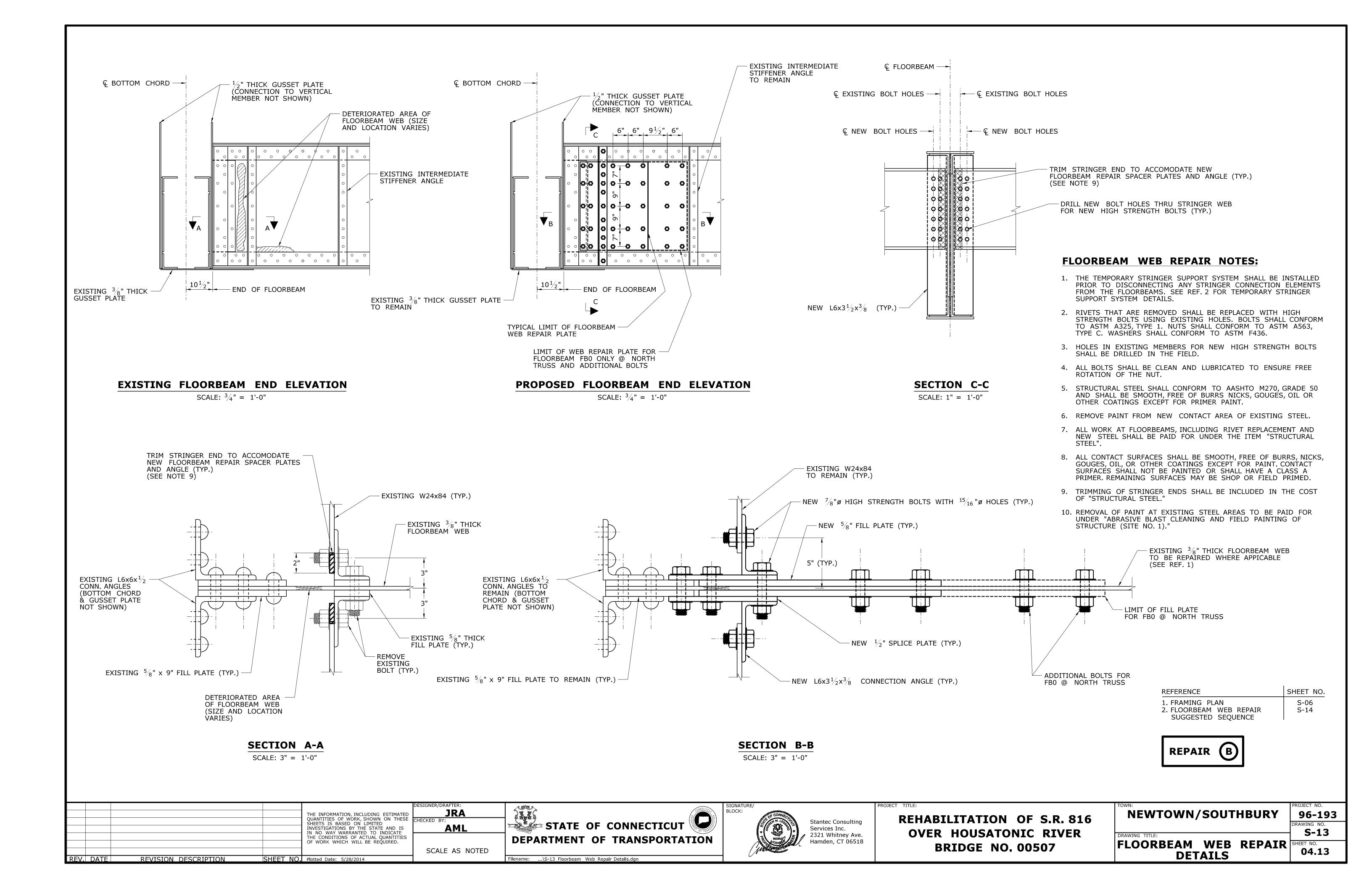
S-11 SHEET NO. 04.11

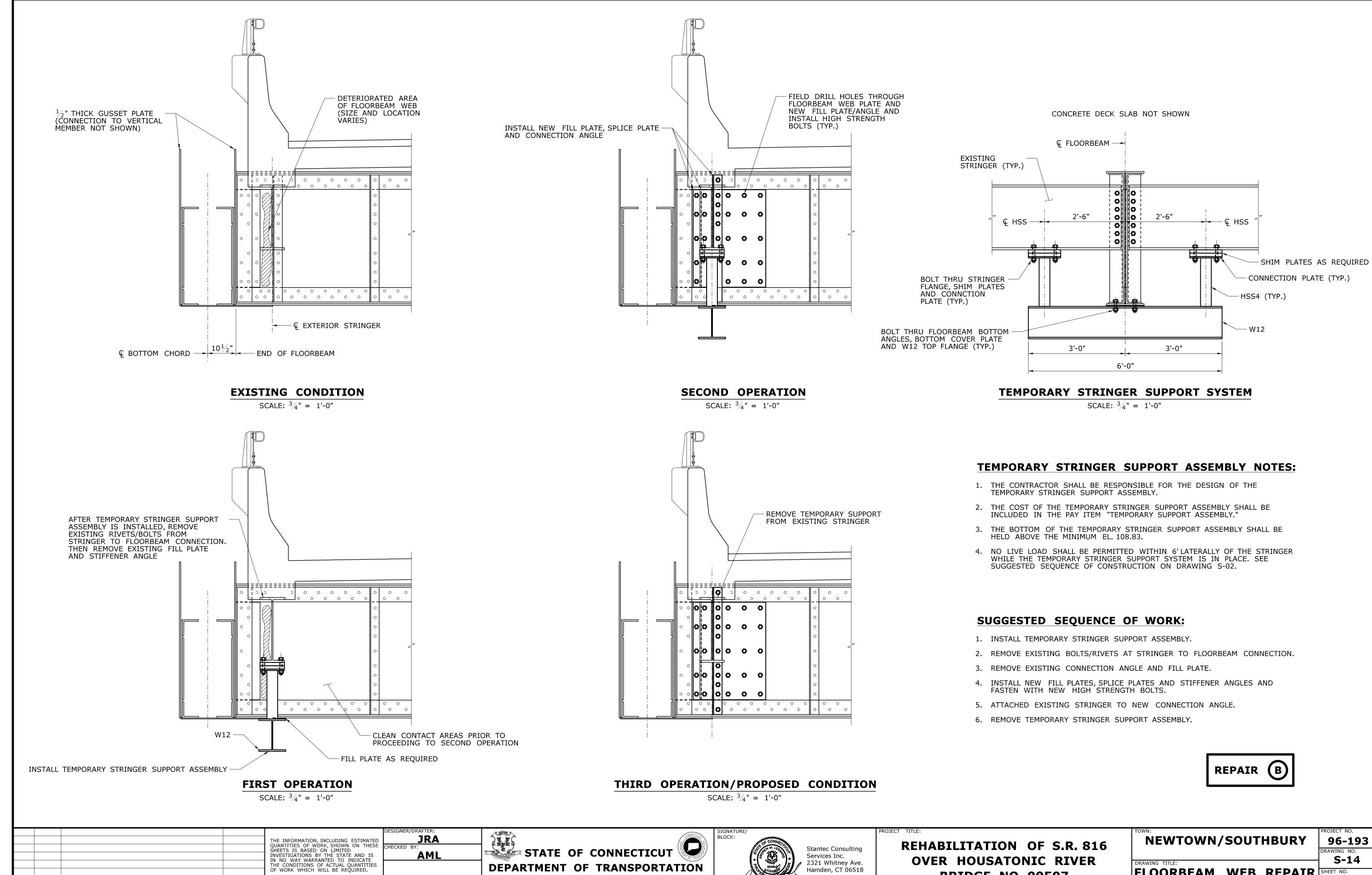
96-193

SCALE AS NOTED

Filename: ...\S-11 Bottom Chord Angle Repair Details.dgn







**DEPARTMENT OF TRANSPORTATION** 

Filename: ...\S-14 Floorbeam Web Repair Suggested Sequence.dgn

SCALE AS NOTED

REVISION DESCRIPTION

SHEET NO. Plotted Date: 5/28/2014

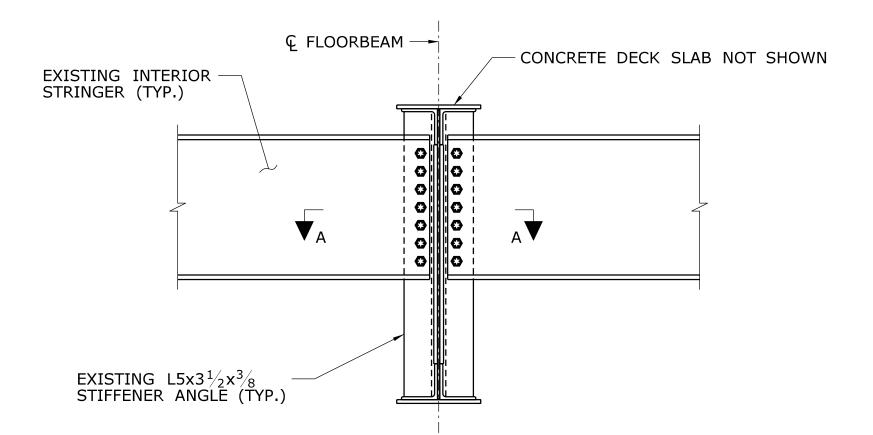
REV. DATE

2321 Whitney Ave.

Hamden, CT 06518

**BRIDGE NO. 00507** 

**S-14** FLOORBEAM WEB REPAIR SHEET NO. 04.14 SUGGESTED SEQUENCE



#### **EXISTING STRINGER END ELEVATION** SCALE: $\frac{3}{4}$ " = 1'-0"

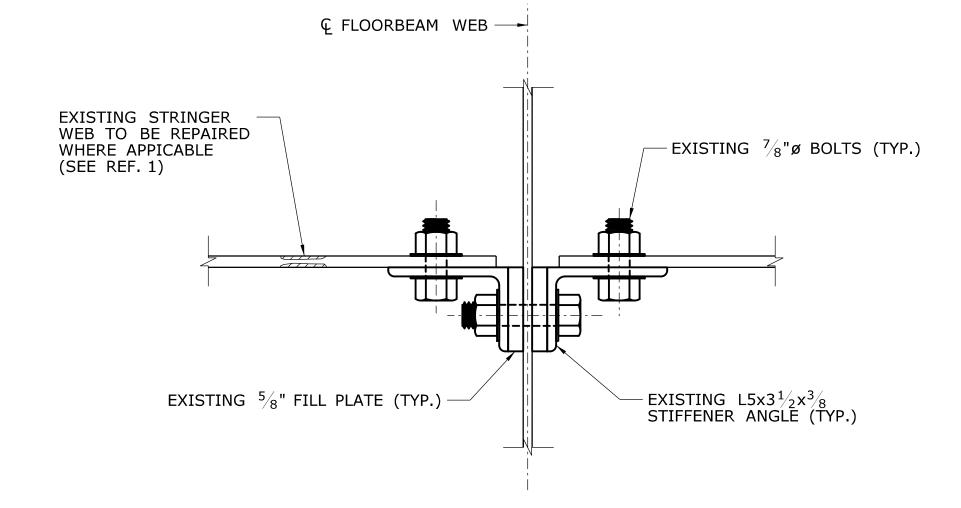
© FLOORBEAM → CONCRETE DECK SLAB NOT SHOWN EXISTING INTERIOR -STRINGER (TYP.) 1'-9" NEW L5x3 $\frac{1}{2}$ x $\frac{3}{8}$  STIFFENER ANGLE (TYP.)

#### PROPOSED STRINGER END ELEVATION

SCALE:  $\frac{3}{4}$ " = 1'-0"

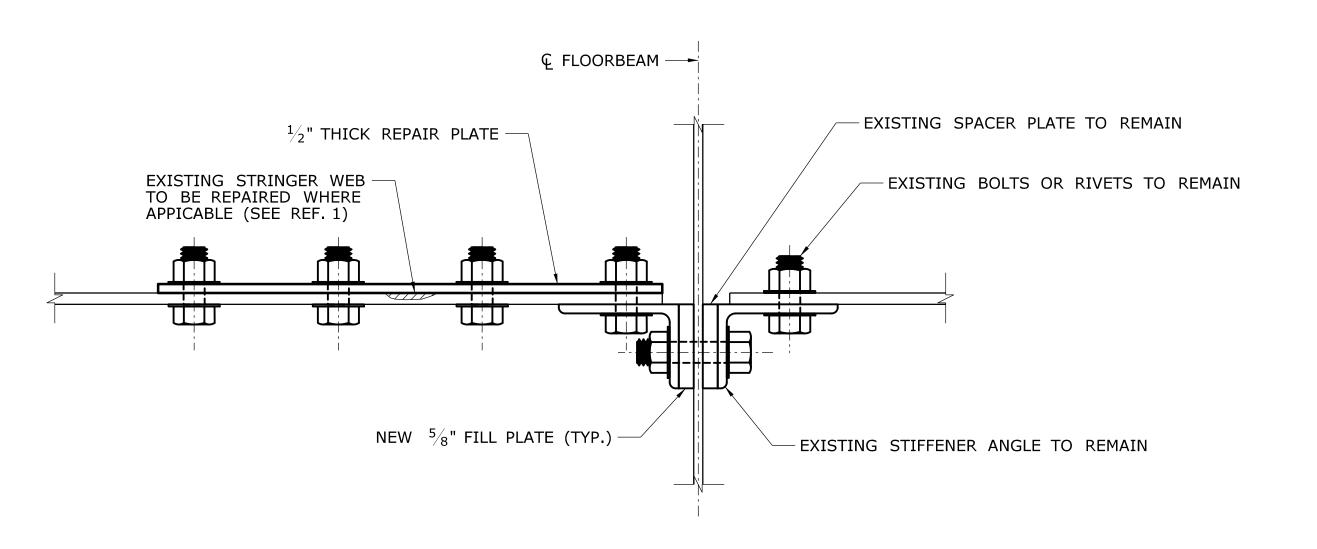
#### STRINGER WEB REPAIR NOTES:

- 1. THE TEMPORARY STRINGER SUPPORT SYSTEM SHALL BE INSTALLED PRIOR TO DISCONNECTING ANY STRINGER CONNECTION ELEMENTS. SEE REF. 2 FOR TEMPORARY STRINGER SUPPORT SYSTEM DETAILS.
- 2. RIVETS THAT ARE REMOVED SHALL BE REPLACED WITH HIGH STRENGTH BOLTS USING EXISTING HOLES. BOLTS SHALL CONFORM TO ASTM A325, TYPE 1. NUTS SHALL CONFORM TO ASTM A563, TYPE C. WASHERS SHALL CONFORM TO ASTM
- 3. HOLES IN EXISTING MEMBERS FOR NEW HIGH STRENGTH BOLTS SHALL BE DRILLED IN THE FIELD.
- 4. ALL BOLTS SHALL BE CLEAN AND LUBRICATED TO ENSURE FREE ROTATION OF THE NUT.
- 5. STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270, GRADE 50 AND SHALL BE SMOOTH, FREE OF BURRS NICKS, GOUGES, OIL OR OTHER COATINGS EXCEPT FOR PRIMER PAINT.
- 6. REMOVE PAINT FROM NEW CONTACT AREA OF EXISTING STEEL.
- 7. ALL WORK AT STRINGERS, INCLUDING RIVET REPLACEMENT AND NEW STEEL SHALL BE PAID FOR UNDER THE ITEM "STRUCTURAL STEEL".
- 8. ALL CONTACT SURFACES SHALL BE SMOOTH, FREE OF BURRS, NICKS, GOUGES, OIL, OR OTHER COATINGS EXCEPT FOR PAINT. CONTACT SURFACES SHALL NOT BE PAINTED OR SHALL HAVE A CLASS A PRIMER. REMAINING SURFACES MAY BE SHOP OR FIELD PRIMED AND PAINTED.
- 9. REMOVAL OF PAINT AT EXISTING STEEL AREAS TO BE PAID FOR UNDER "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF STRUCTURE (SITE NO. 1)."



**SECTION A-A** SCALE: 3'' = 1'-0''

SHEET NO. Plotted Date: 5/28/2014



**SECTION B-B** SCALE: 3" = 1'-0"

SHEET NO. REFERENCE 1. FRAMING PLAN
2. FLOORBEAM WEB REPAIR
SUGGESTED SEQUENCE S-06 S-14



REVISION DESCRIPTION

REV. DATE

JRA **AML** SCALE AS NOTED

STATE OF CONNECTICUT **DEPARTMENT OF TRANSPORTATION** 

Filename: ...\S-15 Stringer Web Repair Details.dgn

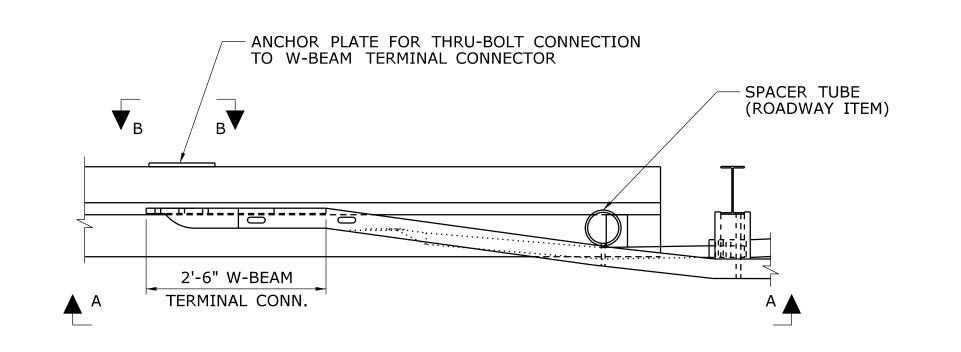


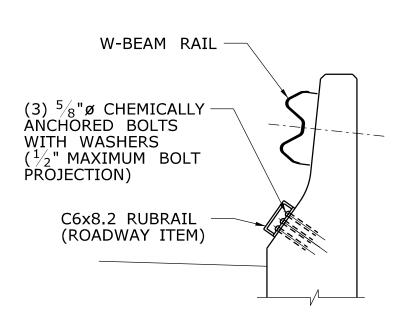
REHABILITATION OF S.R. 816 **OVER HOUSATONIC RIVER BRIDGE NO. 00507** 

TOWN:
NEWTOWN/SOUTHBURY

STRINGER WEB REPAIR **DETAILS** 

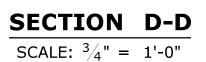
S-15 04.15

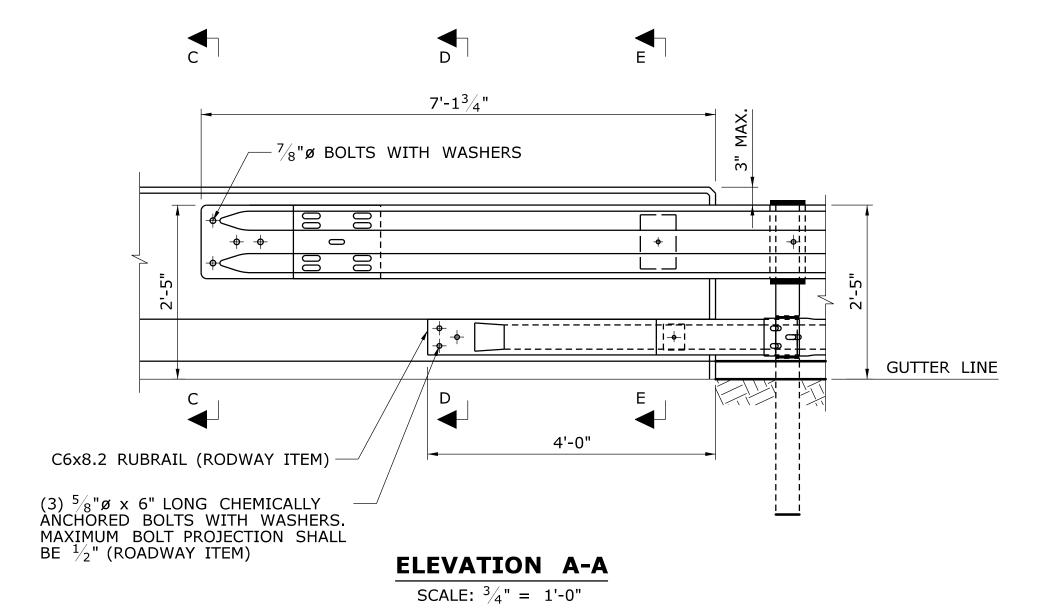


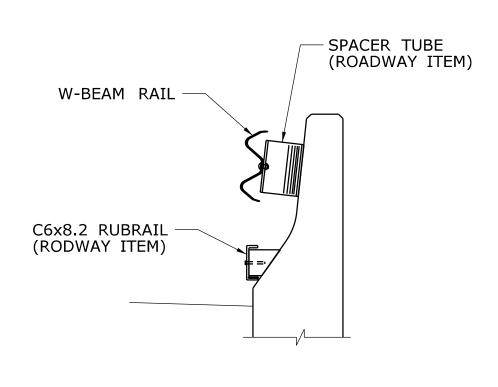


# METAL BRIDGE RAIL ATTACHMENT PLAN

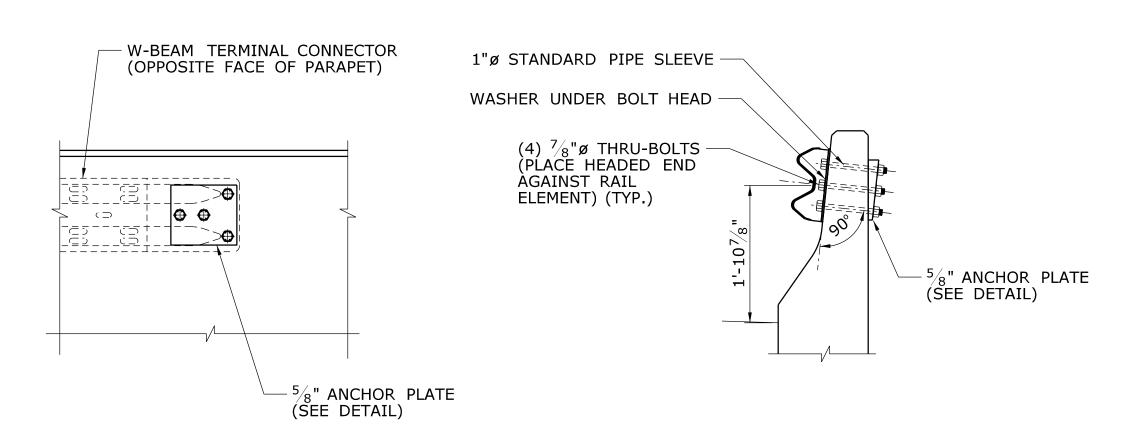
SCALE:  $\frac{3}{4}$ " = 1'-0"

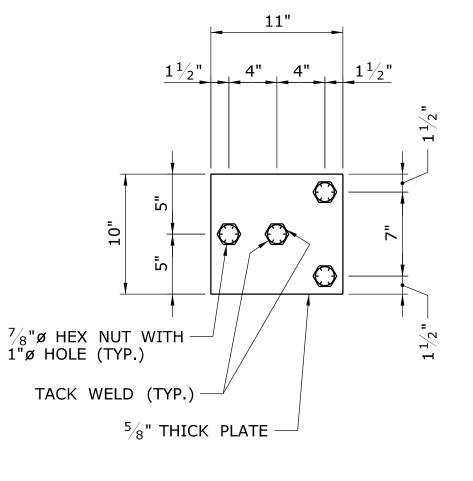






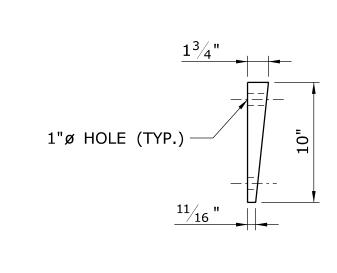
# **SECTION E-E** SCALE: $\frac{3}{4}$ " = 1'-0"





**ANCHOR PLATE DETAIL** 

SCALE:  $1\frac{1}{2}$ " = 1'-0"



#### SHIM PLATE SECTION

SCALE:  $1\frac{1}{2}$ " = 1'-0"

#### METAL BEAM RAIL NOTES

- STEEL PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.
- ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325, MECHANICALLY GALVANIZED.
- 1"ø PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A53 GRADE B OR ASTM A501 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
- 4. ROADWAY ELEMENTS SHALL BE PAID FOR UNDER THE APPLICABLE ROADWAY ITEMS.
- 5. ALL RAIL ANCHORAGE MATERIAL REQUIRED FOR END ATTACHMENTS SHALL BE PAID FOR UNDER THE APPLICABLE ROADWAY ITEMS.
- 6. CORE DRILL THROUGH PARAPET TO FACILITATE INSTALLATION OF 1"ø PIPE SLEEVE. THIS WORK TO BE INCLUDED IN THE ITEM "R-B 350 BRIDGE ATTACHMENT SAFETY SHAPE PARAPET."
- 7. THE COST OF THE W-BEAM TERMINAL CONNECTOR, SPACER TUBE, W-BEAM RAIL, SHIM PLATE, NUTS AND BOLTS SHALL BE INCLUDED IN THE ITEM "R-B 350 BRIDGE ATTACHMENT SAFETY SHAPE PARAPET."

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					OF WORK WHICH WILL BE REQUIRED.
REV.	DATE	REVISION DESCRIPTION	SHEET	NO.	Plotted Date: 5/28/2014

**ELEVATION B-B** 

SCALE:  $\frac{3}{4}$ " = 1'-0"

GNER/DRAFTER:

JRA

CKED BY:

AML

SCALE AS NOTED

SECTION C-C

SCALE:  $\frac{3}{4}$ " = 1'-0"



Filename: ...\S-16 Deck Details.dgn



REHABILITATION OF S.R. 816 OVER HOUSATONIC RIVER BRIDGE NO. 00507

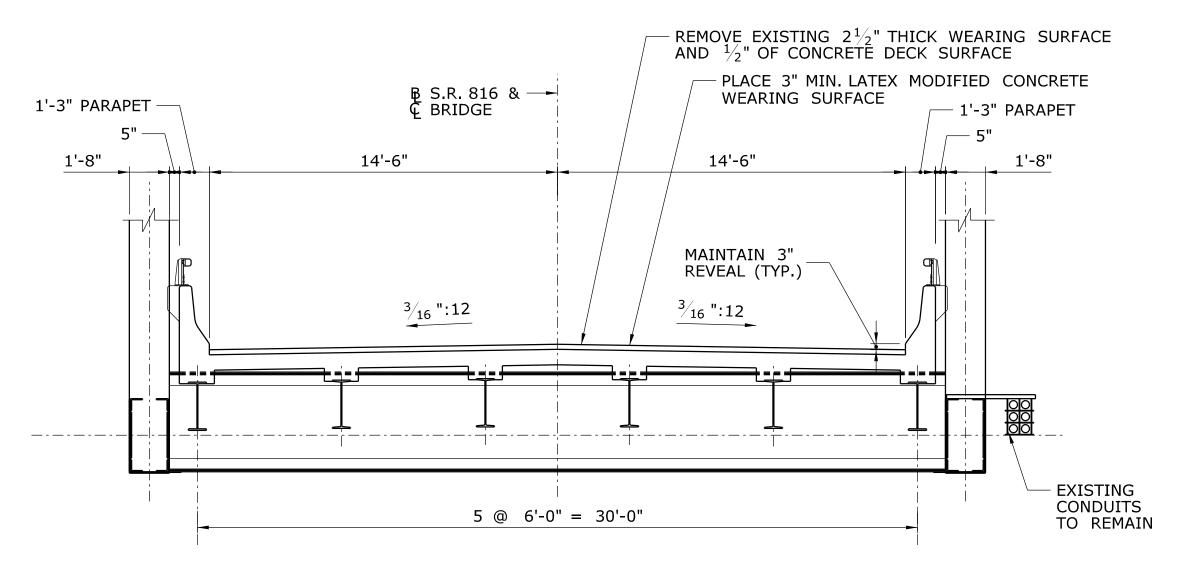
TOWN:
NEWTOWN/SOUTHBURY

DECK DETAILS

S-16
HEET NO.
04.16

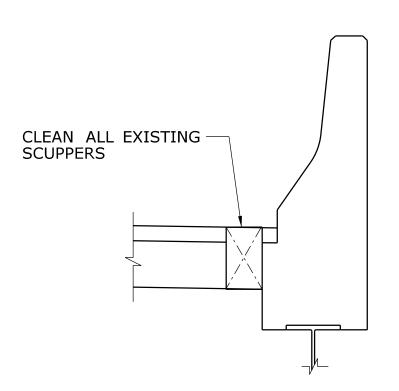
96-193

DRAWING NO.



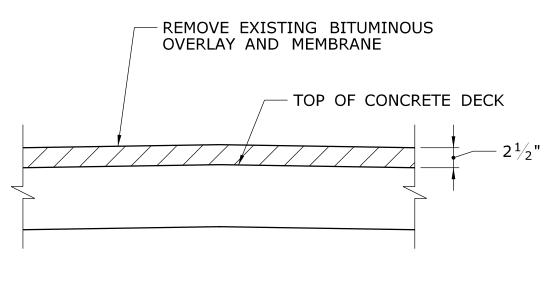
#### TYPICAL BRIDGE SECTION

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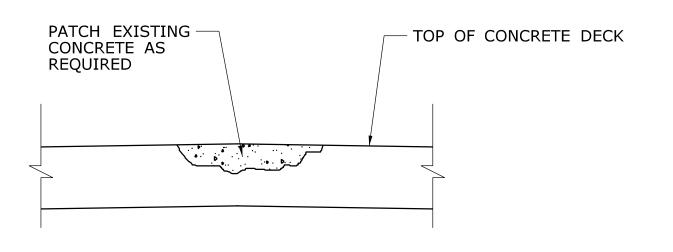


#### **EXISTING SCUPPER DETAIL**

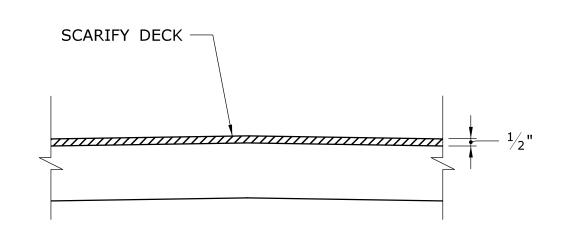
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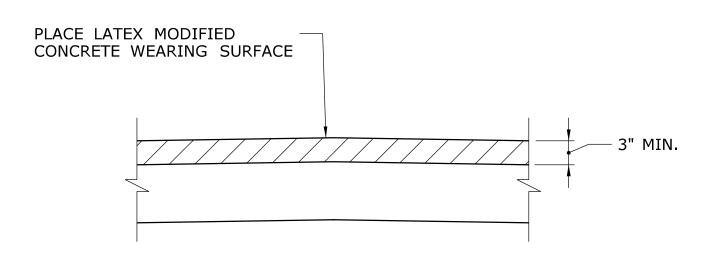
## **STEP 1**SCALE: 1" = 1'-0"



**STEP 2**SCALE: 1" = 1'-0"



**STEP 3**SCALE: 1" = 1'-0"



**STEP 4**SCALE: 1" = 1'-0"

#### SUGGESTED SEQUENCE OF CONSTRUCTION

- 1. REMOVE EXISTING BITUMINOUS OVERLAY AND MEMBRANE.
- 2. INSPECT EXISTING CONCRETE DECK. PATCH DECK AS DIRECTED BY THE ENGINEER.
- 3. SCARIFY DECK.
- 4. PLACE LATEX MODIFIED CONCRETE OVERLAY.
- 5. INSTALL DECK JOINTS.

#### **NOTES:**

- 1. REMOVAL OF EXISTING WEARING SURFACE SHALL BE PAID FOR UNDER THE ITEM "REMOVAL OF HMA WEARING SURFACE."
- 2. PATCHING OF EXISTING CONCRETE DECK SHALL BE PAID FOR UNDER THE ITEM "PARTIAL DEPTH PATCH."
- 3. SCARIFYING THE DECK SURFACE SHALL BE PAID FOR UNDER THE ITEM "LATEX MODIFIED CONCRETE."
- 4. PLACEMENT OF THE LATEX MODIFIED CONCRETE OVERLAY SHALL BE PAID FOR UNDER THE ITEM "LATEX MODIFIED CONCRETE."

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SHEET NO. Plotted Date: 5/28/2014

REVISION DESCRIPTION



SCALE AS NOTED

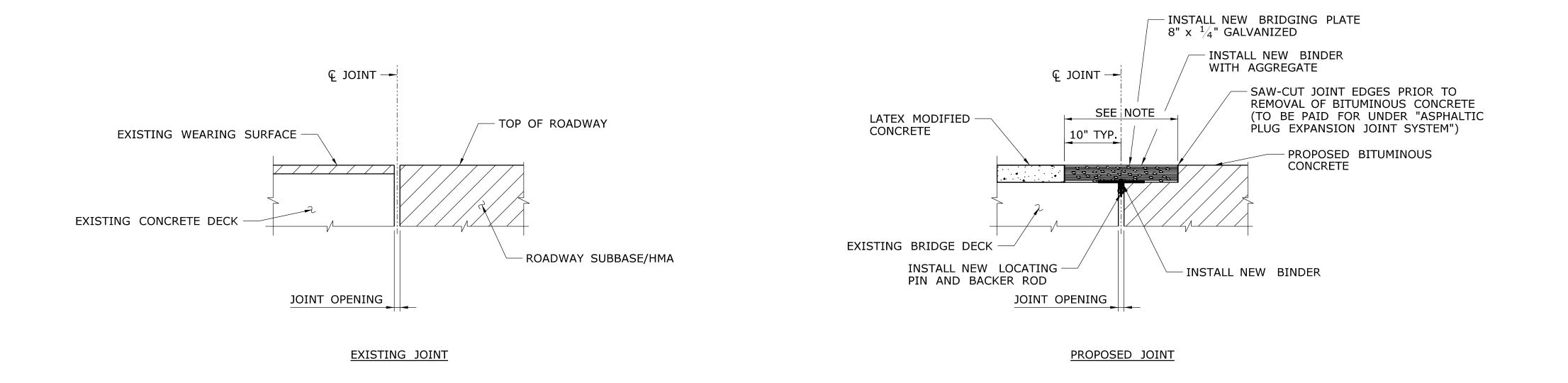


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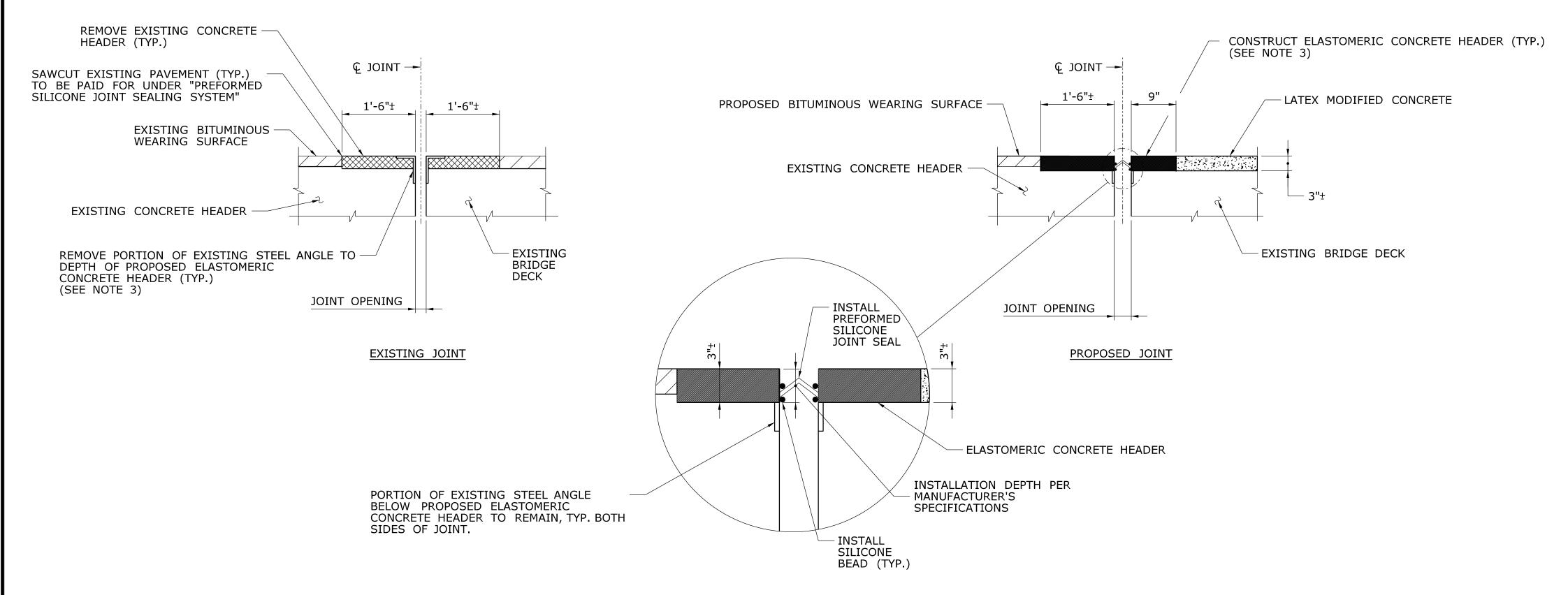
REHABILITATION OF S.R. 816 OVER HOUSATONIC RIVER BRIDGE NO. 00507

NEWTOWN/SOUTHBU
DRAWING TITLE:



#### **ASPHALTIC PLUG EXPANSION JOINT SYSTEM**

NOT TO SCALE



#### PREFORMED SILICONE JOINT SEALING SYSTEM

NOT TO SCALE

#### **ASPHALTIC PLUG EXPANSION JOINT:**

- 1. REMOVE NEW BITUMINOUS CONCRETE OVERLAY AND MEMBRANE WATERPROOFING. REPLACE WITH ASPHALTIC PLUG EXPANSION JOINT SYSTEM. TO BE PAID FOR UNDER THE ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM" (SEE SPECIAL PROVISIONS).
- 2. REFER TO SPECIAL PROVISIONS FOR TEMPERATURE REQUIREMENTS DURING INSTALLATION OF ASPHALTIC PLUG EXPANSION JOINTS.

THERM	IAL MOVEMENT
LOCATION	MOVEMENT RANGE
ABUT. 1	2 <sup>3</sup> / <sub>4</sub> "
ABUT. 2	<sup>1</sup> / <sub>16</sub> "

#### PREFORMED SILICONE JOINT SEALING SYSTEM:

- 1. REMOVE EXISTING CONCRETE HEADER AND PORTION OF EXISTING CONCRETE DECK. THIS WORK TO BE PAID FOR UNDER THE ITEM "LATEX MODIFIED CONCRETE."
- REMOVE PORTION OF EXISTING STEEL ANGLE. THIS WORK TO BE PAID FOR UNDER THE ITEM "LATEX MODIFIED CONCRETE."
- 3. CONSTRUCT PROPOSED ELASTOMERIC CONCRETE HEADER PER THE MANUFACTURER'S SPECIFICATIONS, TO BE PAID FOR UNDER THE ITEM "PREFORMED SILICONE JOINT SEALING SYSTEM."
- I. PRIOR TO INSTALLING THE ELASTOMERIC CONCRETE, CLEAN SUBSTRATE BY SANDBLASTING. DUST SHALL BE REMOVED BY THE METHOD APPROVED BY THE ENGINEER. THIS WORK SHALL BE PAID FOR UNDER THE ITEM "PREFORMED SILICONE JOINT SEALING SYSTEM."
- 5. THE SURFACES OF THE SUBSTRATE AGAINST WHICH THE ELASTOMERIC CONCRETE IS TO BE PLACED SHALL BE COATED WITH A PRIMER RECOMMENDED BY THE MANUFACTURER. THIS WORK SHALL BE PAID FOR UNDER THE ITEM "PREFORMED SILICONE JOINT SEALING SYSTEM."
- 6. ELASTOMERIC CONCRETE SHALL BE INSTALLED WITHIN 15 MINUTES OF MIXING AND MUST BE THOROUGHLY CONSOLIDATED BEFORE THE PRIMER HAS SET.
- 7. ELASTOMERIC CONCRETE HEADER SHALL BE INSTALLED WHEN THE AMBIENT AIR TEMPERATURE IS 45° F AND RISING.
- 8. CONSTRUCT PREFORMED SILICONE JOINT SEALANT PER MANUFACTURER'S SPECIFICATIONS. THIS WORK SHALL BE PAID FOR UNDER THE ITEM "PREFORMED SILICONE JOINT SEALING SYSTEM."
- 9. PRIOR TO INSTALLING THE PREFORMED SILICONE JOINT SEALANT, PREPARE JOINT SURFACE BY SANDBLASTING. THIS WORK SHALL BE PAID FOR UNDER THE ITEM "PREFORMED SILICONE JOINT SEALING SYSTEM."
- 10. INSTALL PREFORMED SILICONE JOINT SEALANT. THIS WORK SHALL BE PAID FOR UNDER THE ITEM "PREFORMED SILICONE JOINT SEALING SYSTEM."
- 11. PREFORMED SILICONE JOINT SEALING SYSTEM SHALL BE INSTALLED WHEN THE AMBIENT AIR TEMPERATURE IS 40° F AND
- 12. JOINT PREPARATION AND INSTALLATION OF THE PREFORMED SILICONE JOINT SEALANT MUST BE DONE DURING THE SAME DAY. TRAFFIC WILL NOT BE ALLOWED TO PASS OVER THE JOINT AFTER SANDBLASTING HAS OCCURED.
- 13. SEE SPECIAL PROVISIONS FOR "PREFORMED SILICONE JOINT SEALING SYSTEM" AND "LATEX MODIFIED CONCRETE."

		THE INFORMATION, INCLUDING ESTIMATED	L
		QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED	C
		INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE	L
		THE CONDITIONS OF ACTUAL QUANTITIES	Г
		OF WORK WHICH WILL BE REQUIRED.	l
			l

SHEET NO. Plotted Date: 5/28/2014

REVISION DESCRIPTION

REV. DATE

DESIGNER/DRAFTER:

JRA/JS

CHECKED BY:

AML/SY

SCALE AS NOTED



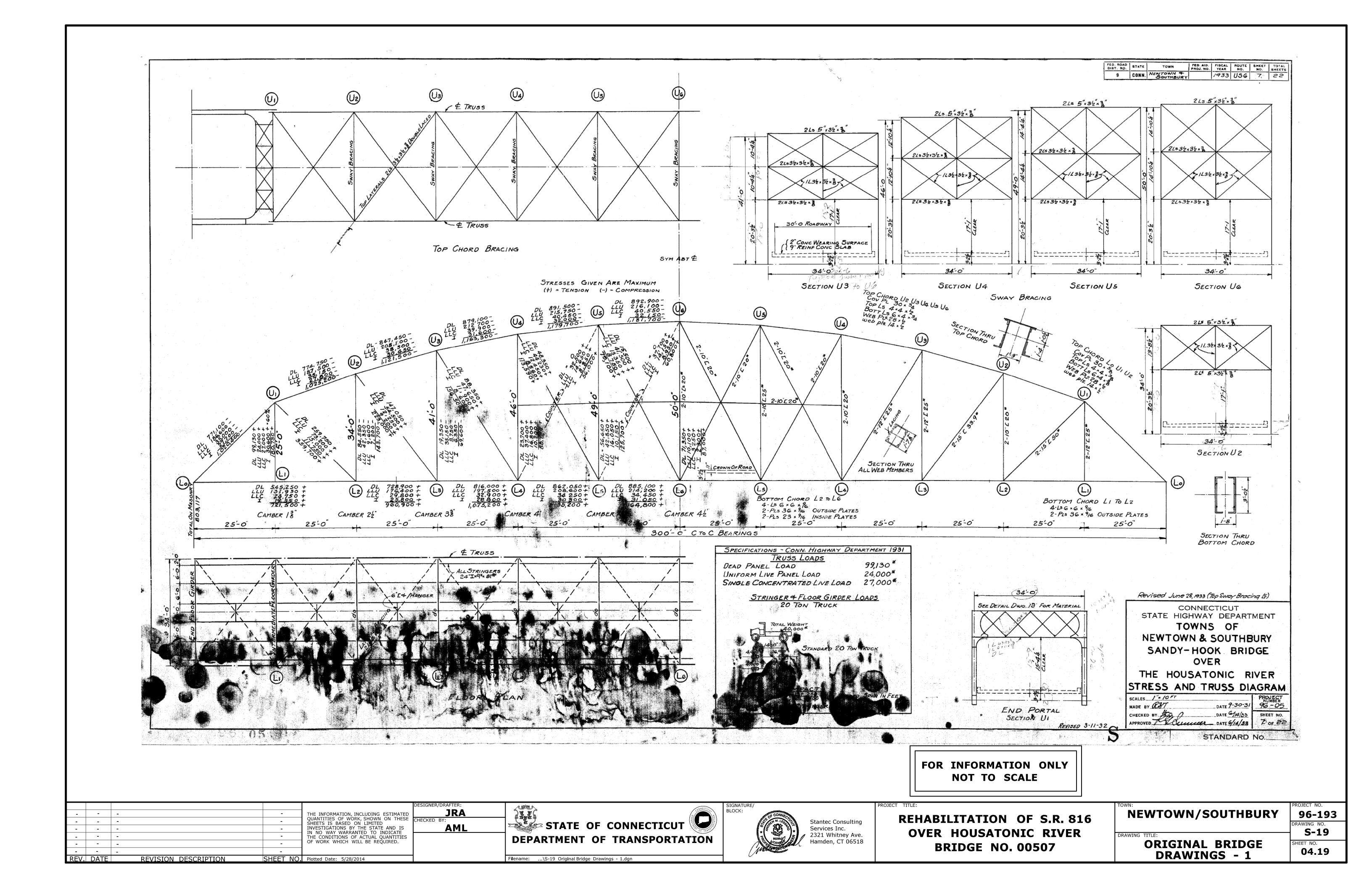


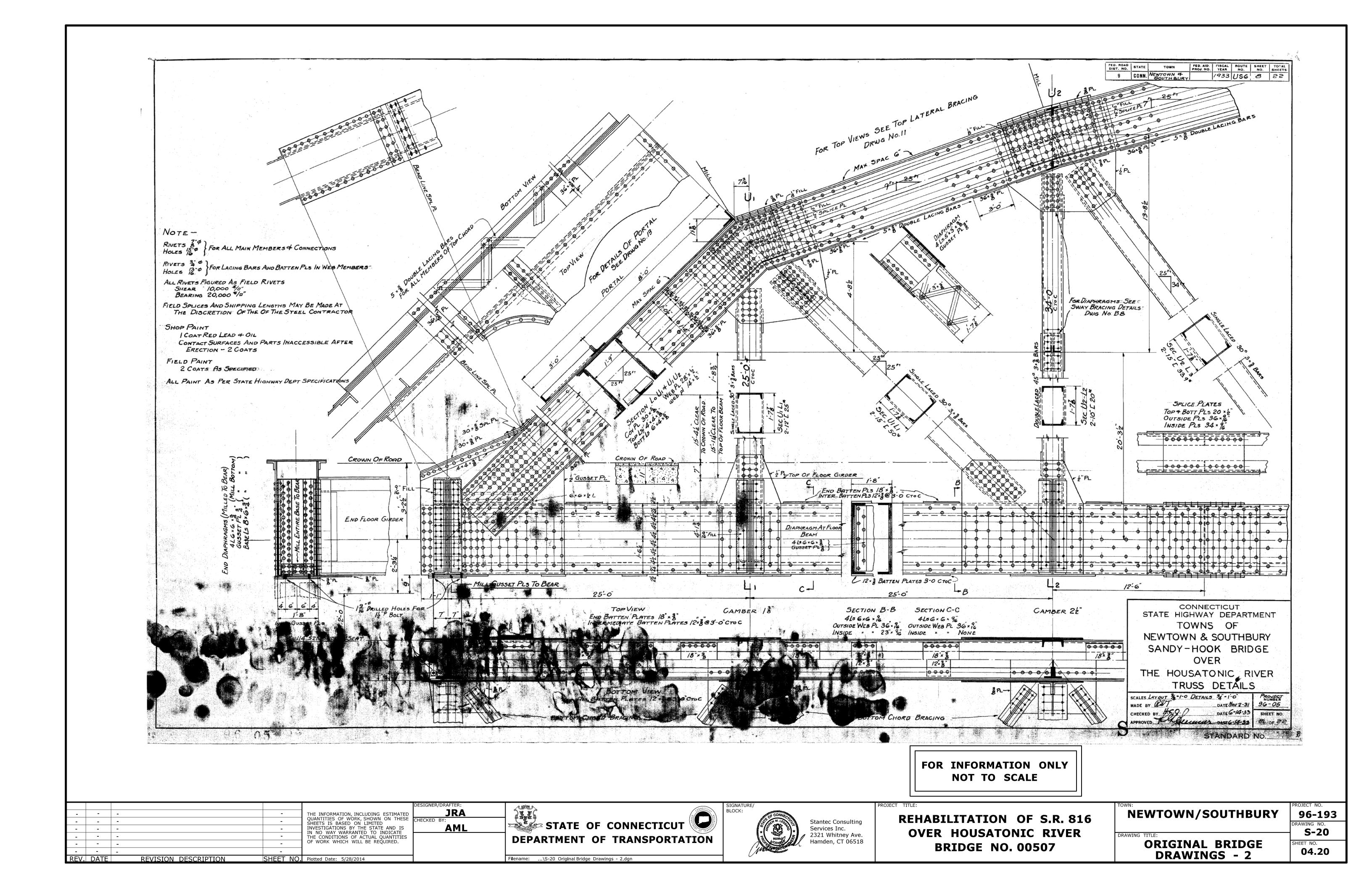
REHABILITATION OF S.R. 816 OVER HOUSATONIC RIVER BRIDGE NO. 00507 NEWTOWN/SOUTHBURY

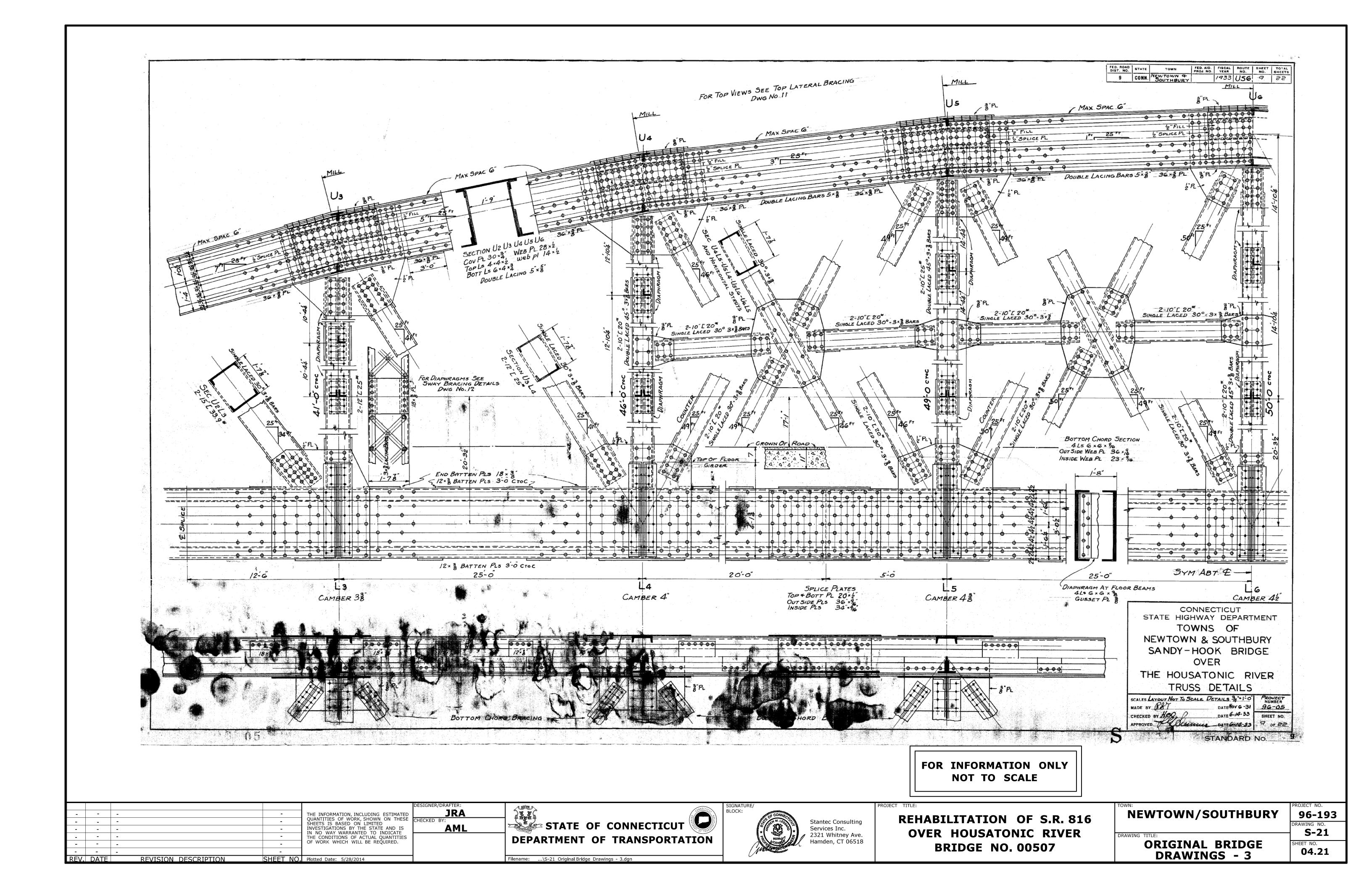
JOINT REHABILITATION

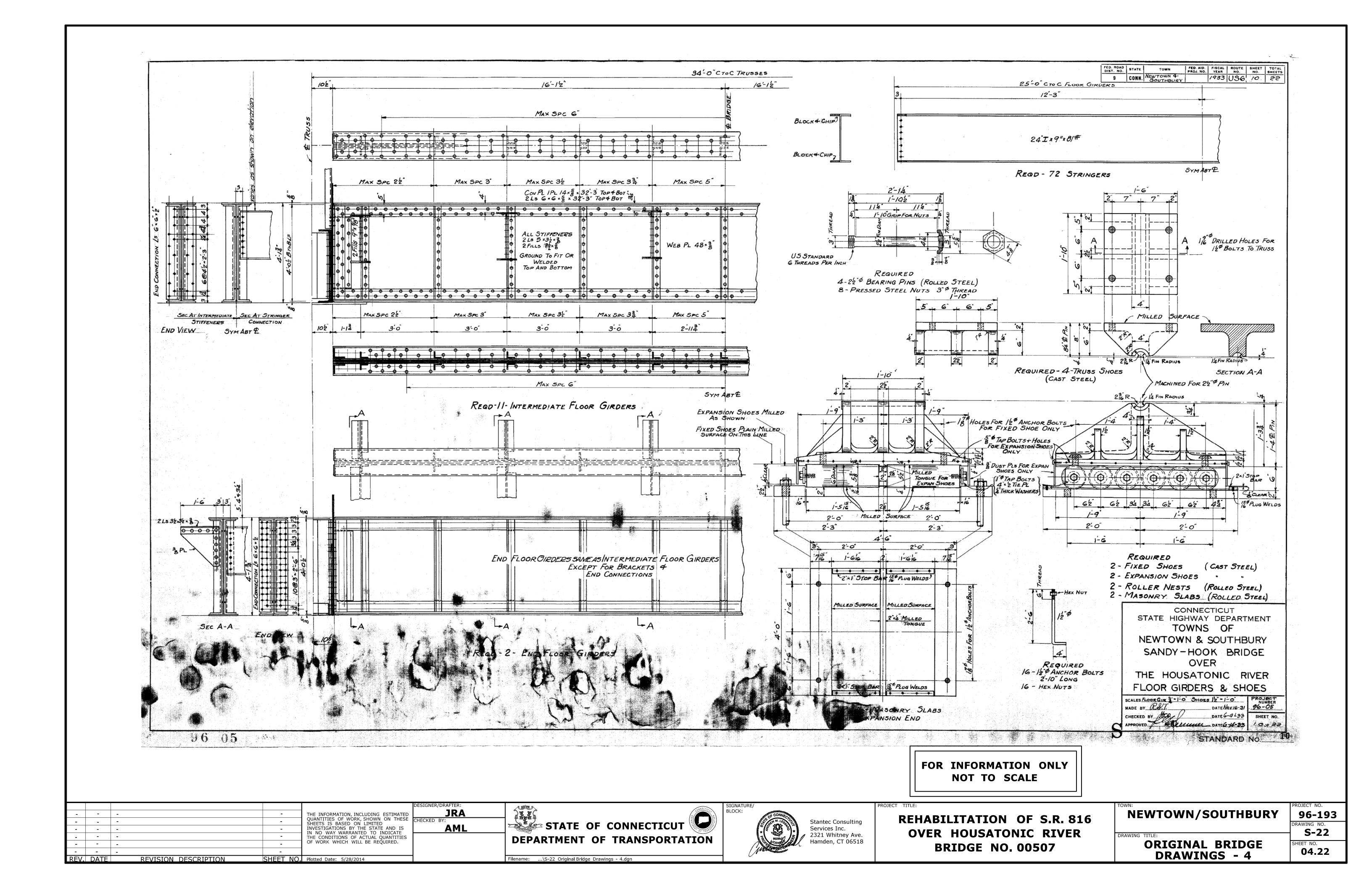
S-18

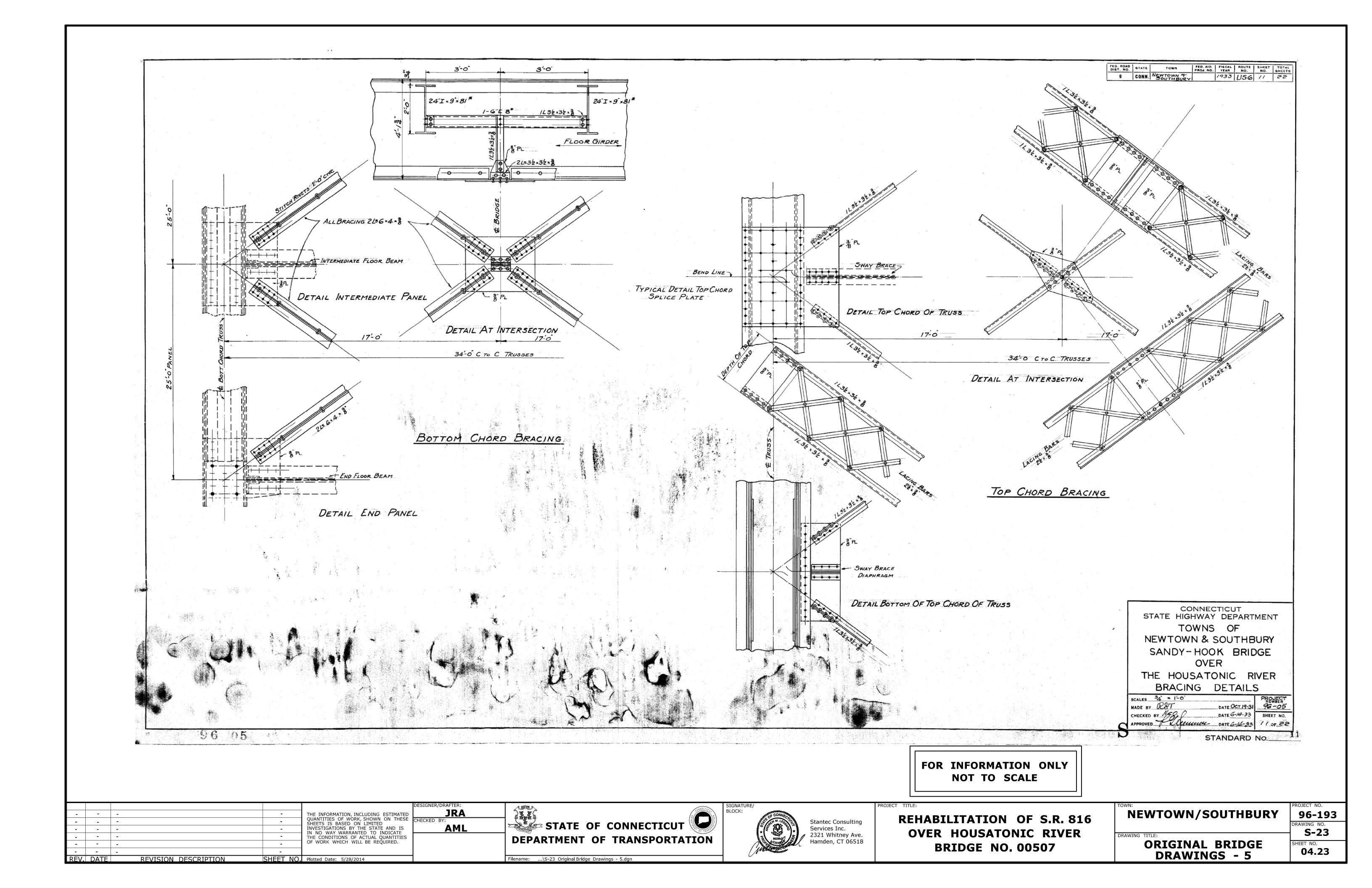
**04.18** 

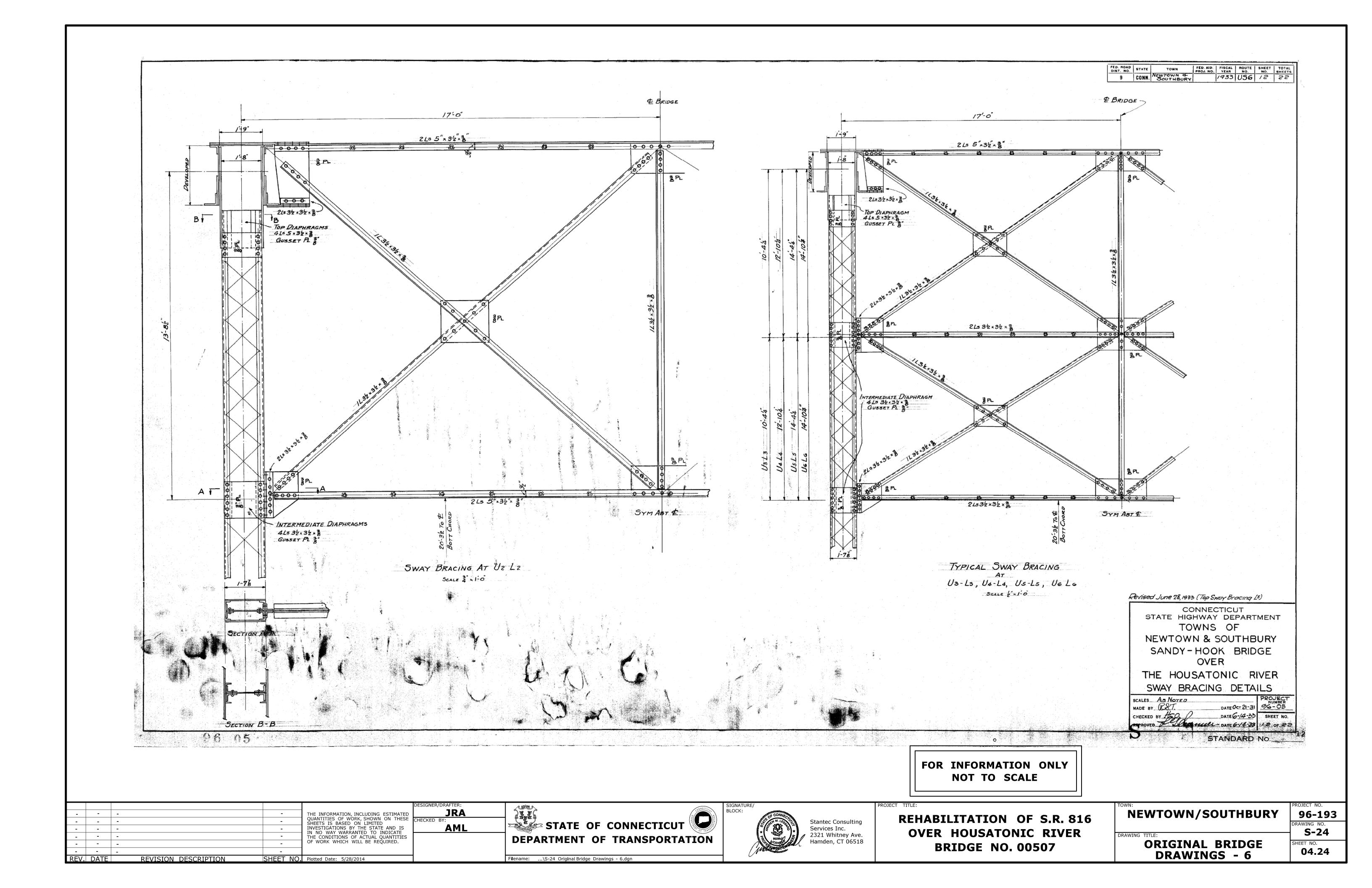


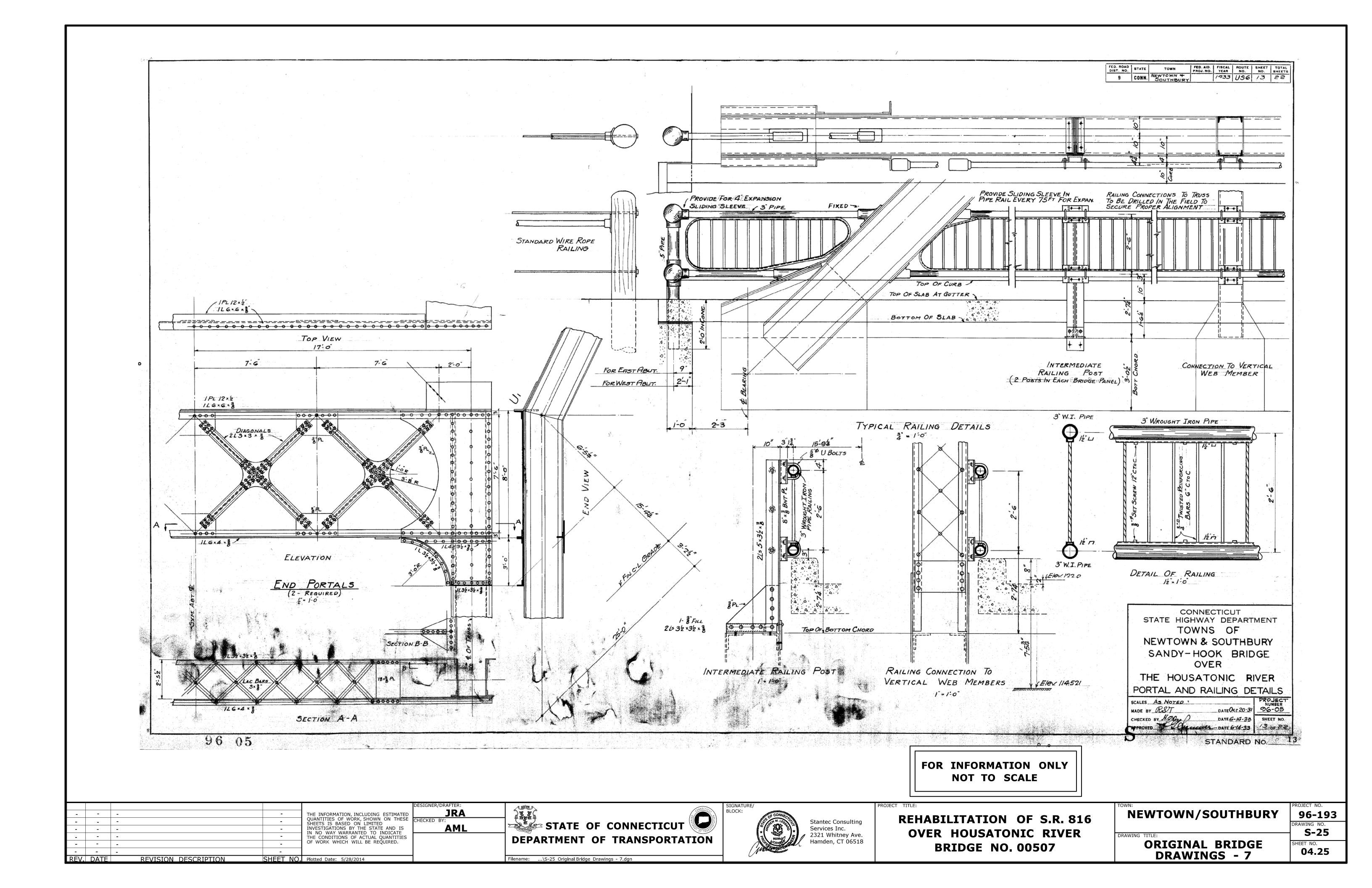


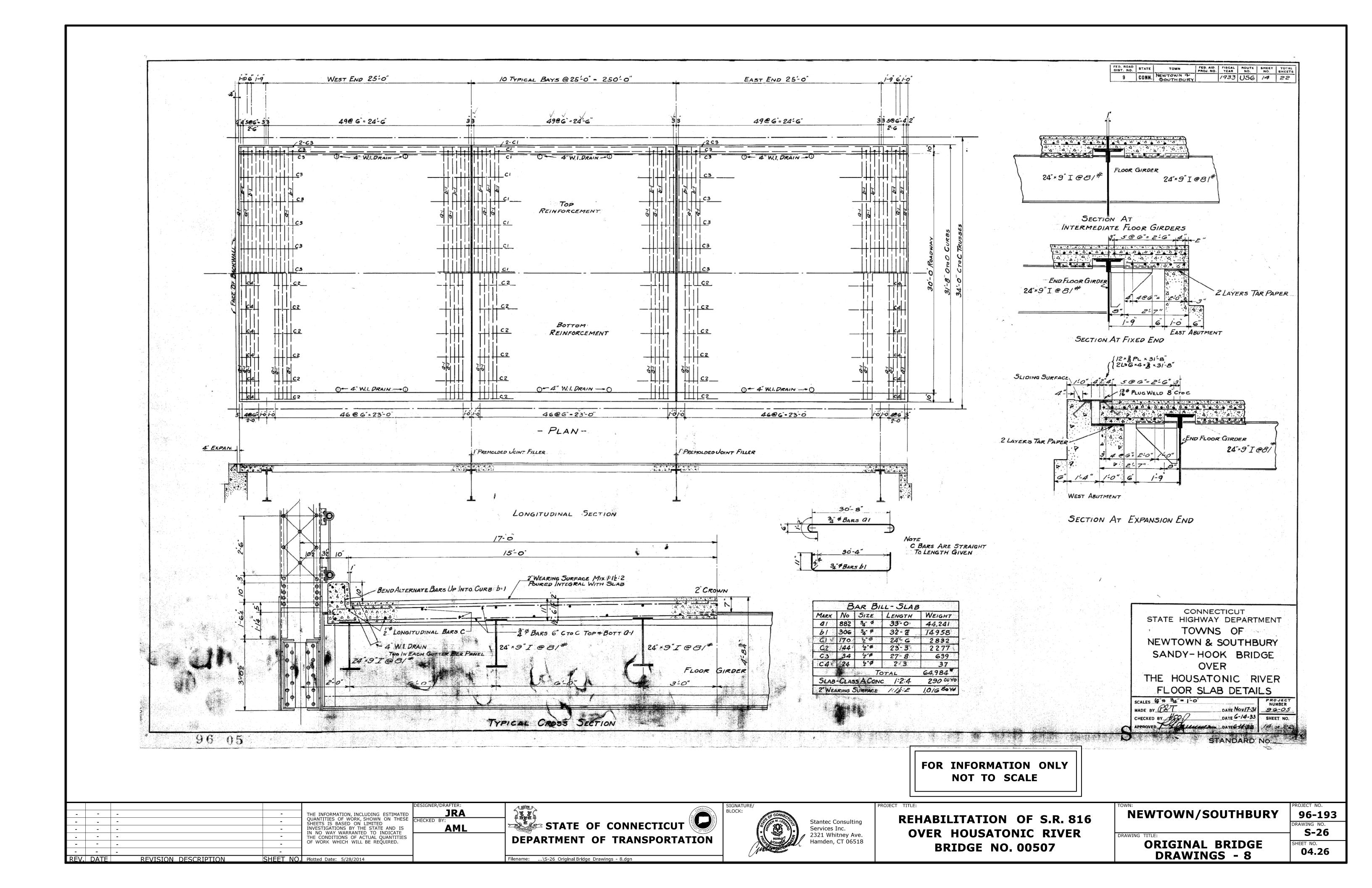


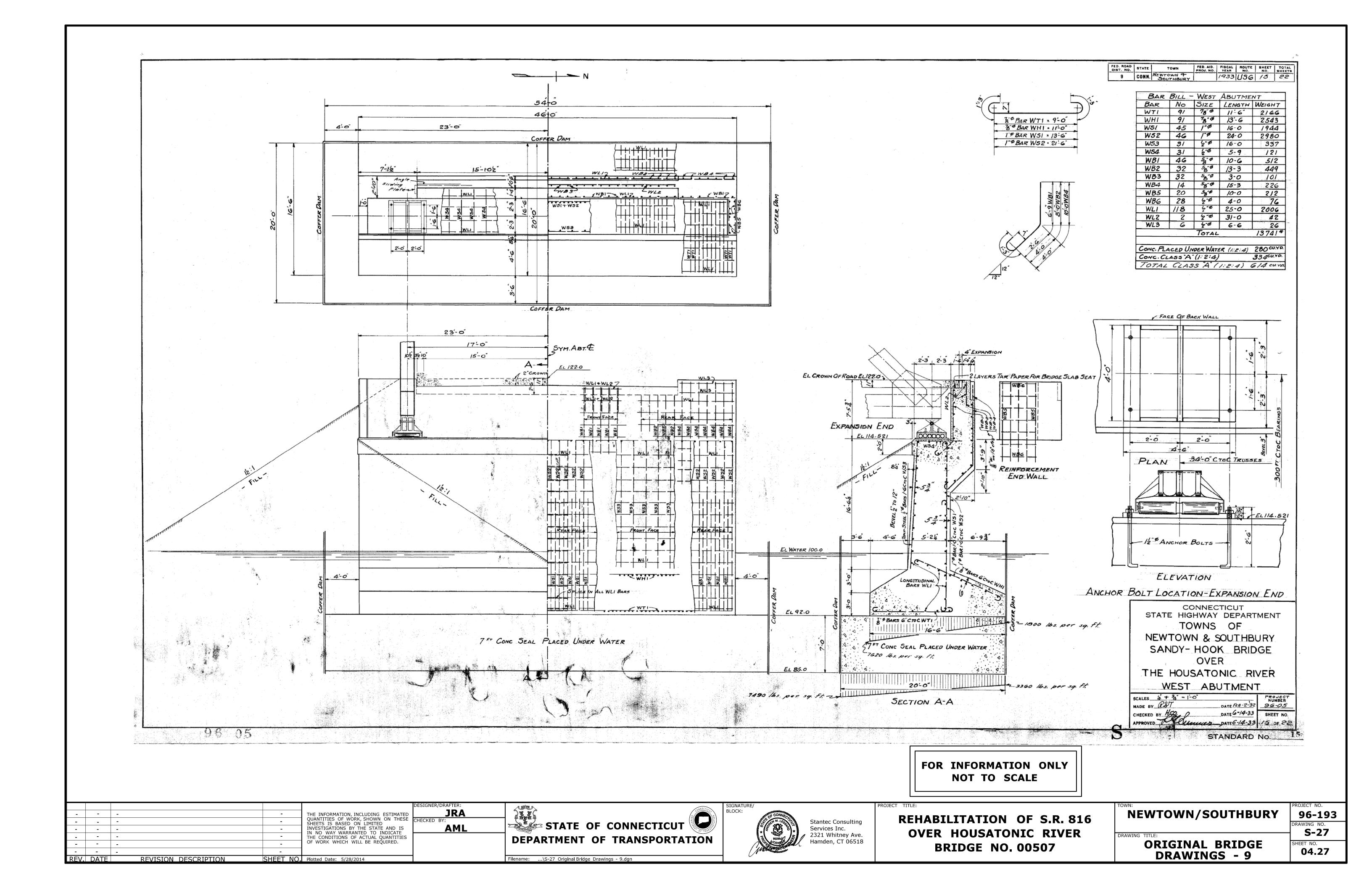


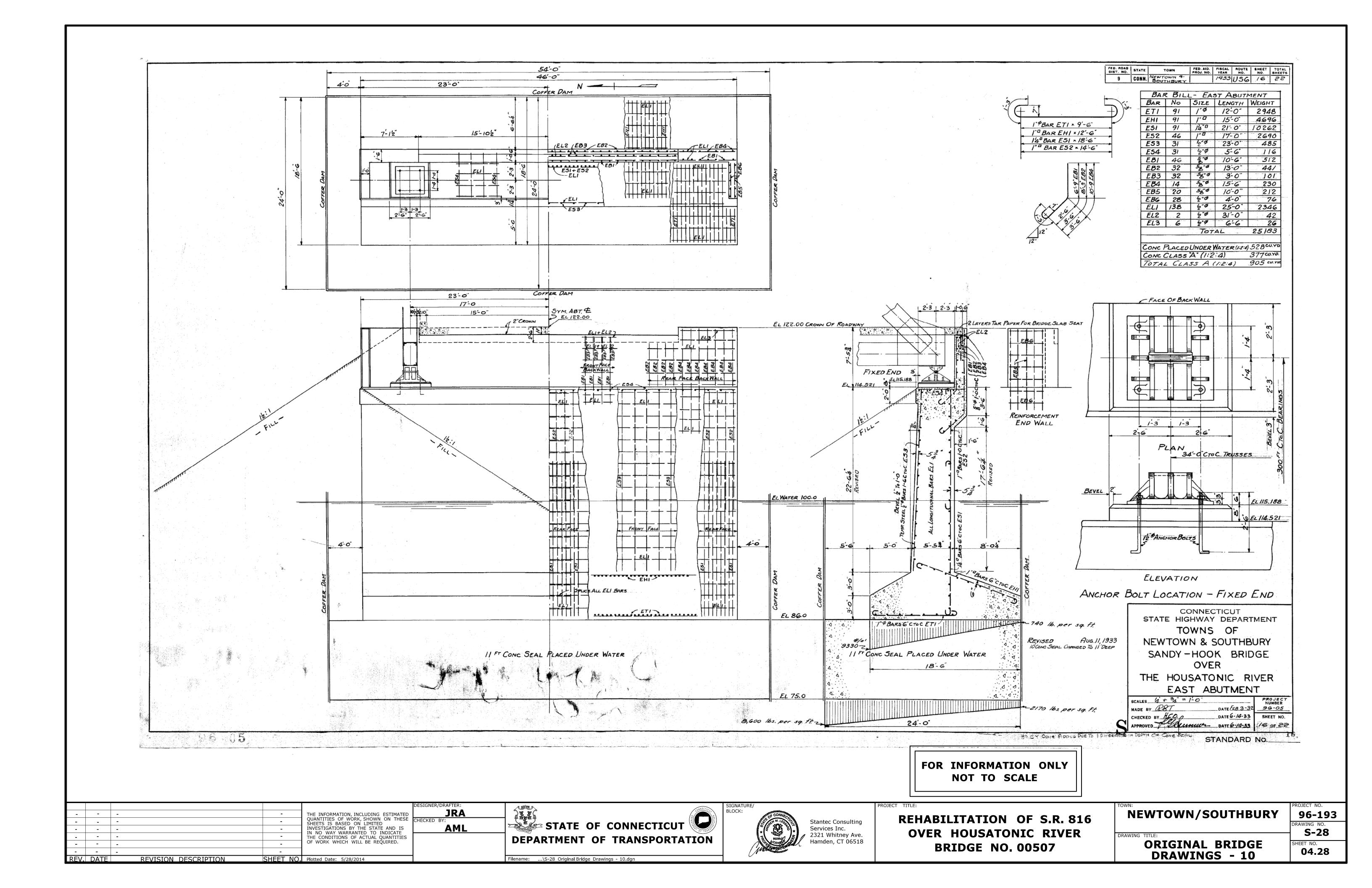


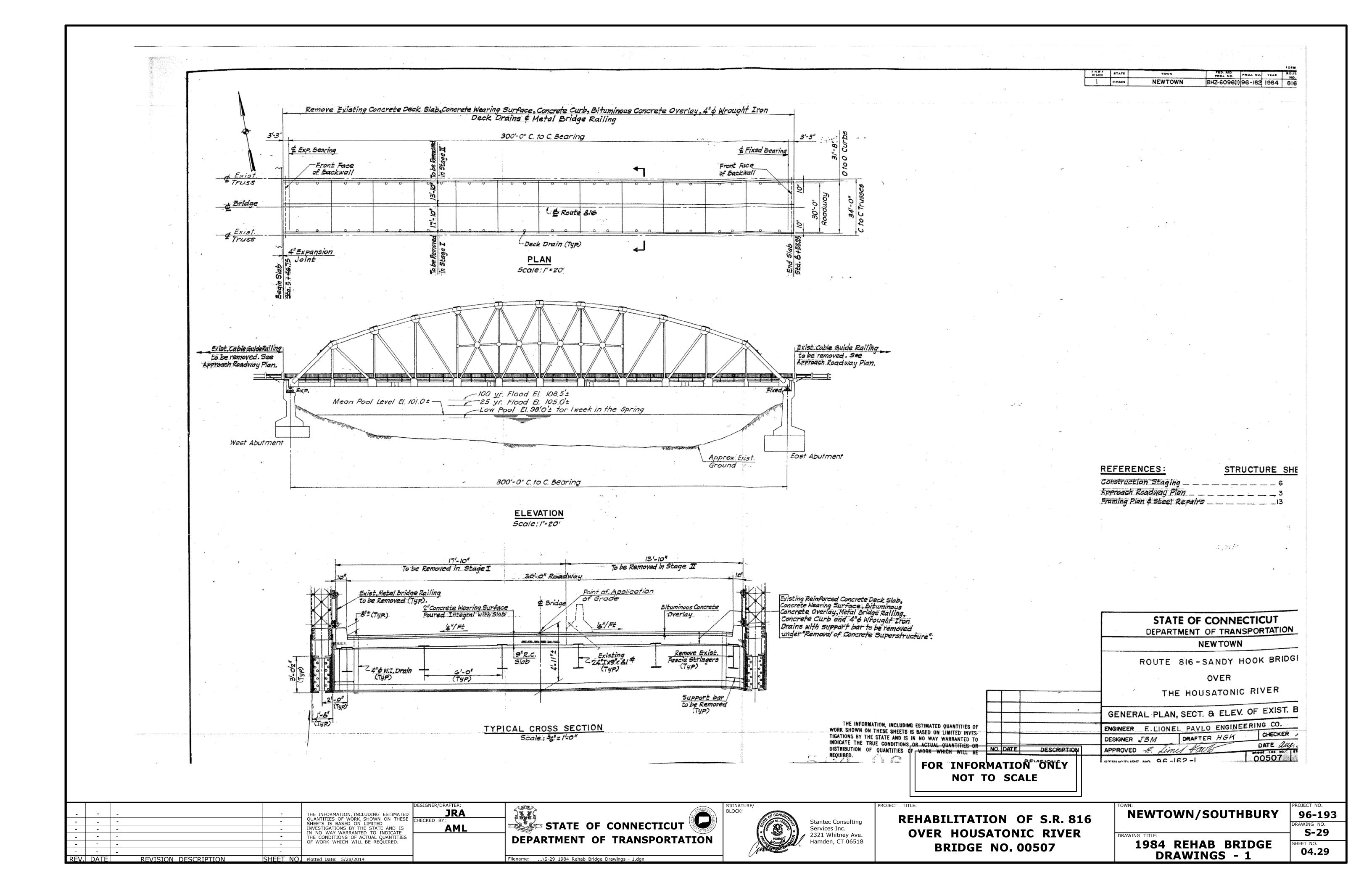


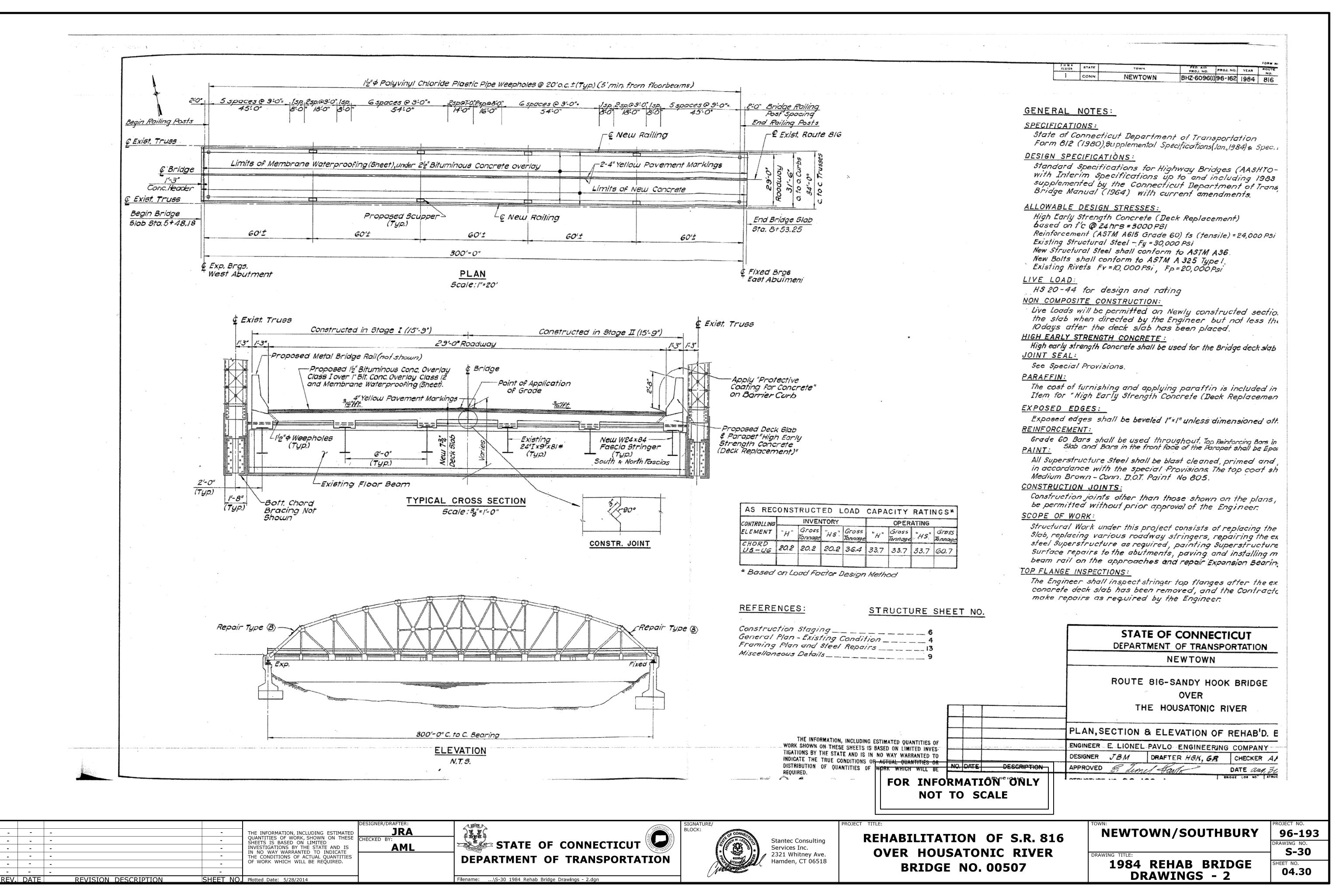


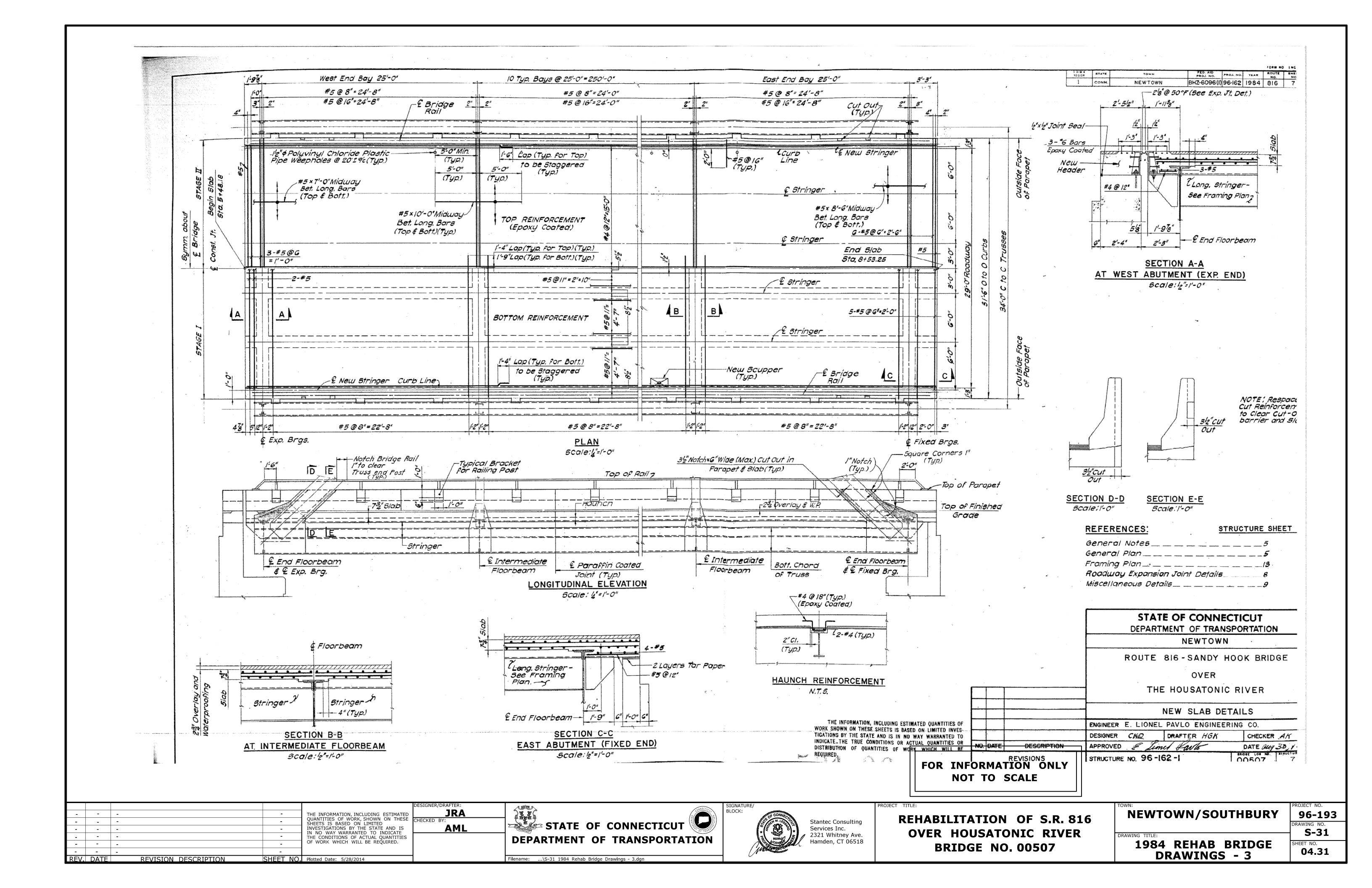


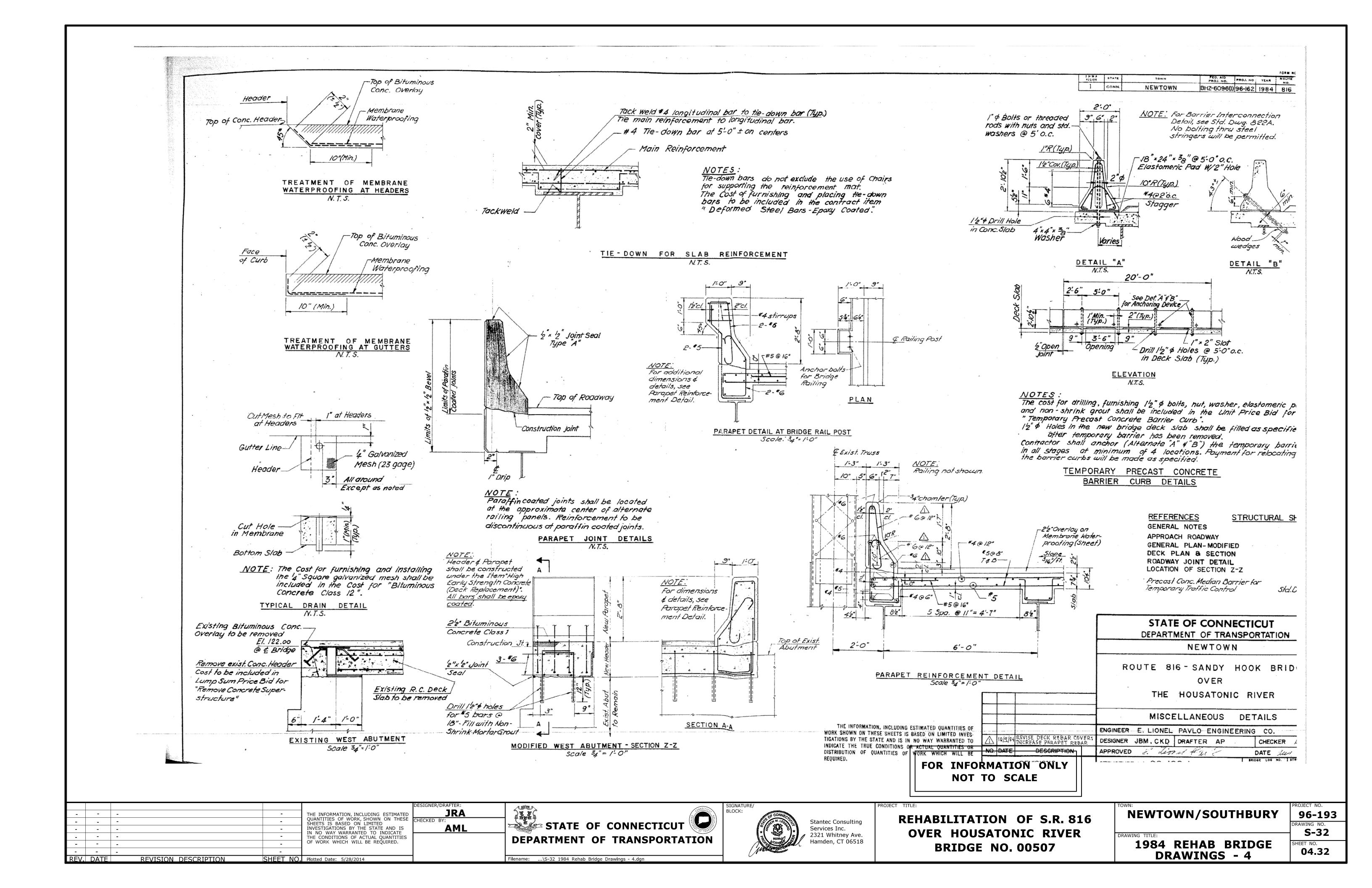












#### RIVET REPLACEMENT NOTES:

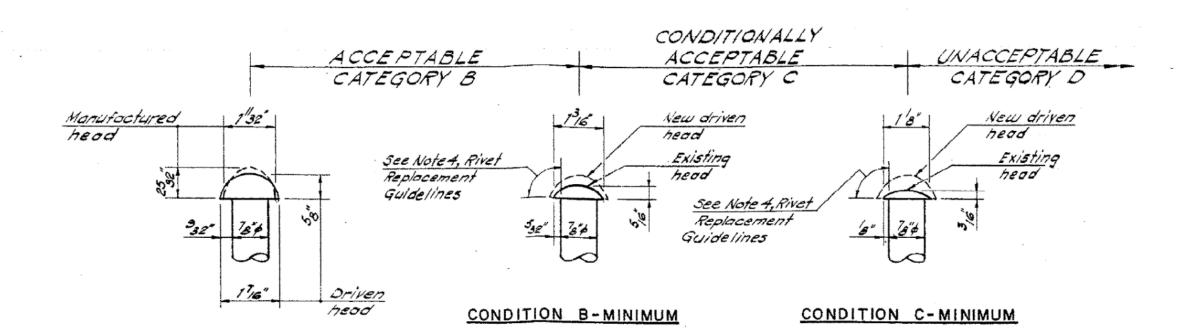
1. UNDER THE ITEM, "RIVET REMOVAL" , THE CONTRACTOR SHALL REMOVE CORRODED RIVETS ON MEMBERS AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE CRITERIA ON THIS SHEET; AND REMOVE RIVETS FOR NEW CONNECTIONS NEEDED TO EFFECT REPAIR OF THE EXISTING STEEL STRUCTURE.

THE QUANTITY SHOWN IN THE ESTIMATED QUANTITY TABLE IS FOR BIDDING PURPOSE ONLY. THE DESIGNATION OF ADDITIONAL REPLACEMENT MAY BE MADE BY THE ENGINEER AFTER THE PARTS OF THE STRUCTURE REQUIRING RIVET REPLACEMENT HAVE BEEN MADE ACCESSIBLE FOR HIS INSPECTION. THE TOP OF THE RIVETS AND SURROUNDING STEEL SHALL BE CLEANED OFF WITH A MECHANICAL ROTARY WIRE BRUSH SO THAT THE ENGINEER CAN DETERMINE THE RIVETS TO BE REMOVED IN ACCORDANCE WITH THE FOLLOWING GUIDELINES.

ALL BOLTS SHALL BE 7/8" Ø ASTM A325, TYPE 1, HIGH-STRENGTH BOLTS, EXCEPT AS NOTED.

ESTIMATED NUMBER OF RIVETS TO BE REPLACED*						
	Neb at SouthTruss	Web of North Truss	Flanges	Total per Floorbeam		
0	-	-		0		
1	- :	10		10		
2	. 5	-	-	5		
3	5	5	-	10		
4	2	-		2		
5	-	-	-	0		
6	2	2	-	4		
7	10	-	-	10		
3	-	-	•	0.		
9	_	<b>–</b>	-	0		
10	5	5	-	10		
//	5	4	-	9		
12	10	2 .	5	17		
	Grand Total					

\* These rivets are in addition to those included under the Steel Repairs (Types 1 thru 8).



#### RIVET REPLACEMENT CRITERIA

UNCONDITIONALLY ACCEPTABLE

Scale. Half Size

#### RIVET REPLACEMENT GUIDELINES:

1. RIVETS (CATEGORY B) WITH DIMENSIONS OF BOTH HEADS MEETING OR SUR-PASSING EACH OF THE MINIMUM REQUIREMENTS SHOWN FOR CONDITION B MAY BE LEFT IN PLACE SUBJECT TO CONDITIONS DESCRIBED IN NOTES

CONDITION A-NEW RIVET

- 2. RIVETS (CATEGORY C) NOT MEETING THE REQUIREMENTS OF CONDITION B, BUT HAVING DIMENSIONS WHICH MEET OR SURPASS AT BOTH HEADS EACH OF THE MINIMUM REQUIREMENTS SHOWN FOR CONDITION C MAY BE LEFT IN PLACE, SUBJECT TO THE FOLLOWING CONDITIONS:
  - A) THERE IS NO PRYING ACTION FROM APPLIED STRESS OR CREVICE CORROSION (SEE GUIDELINE NOTE 5) WHICH TENDS TO SEPARATE THE CONNECTED PARTS.
  - B) RIVETS' HEADS DO NOT HAVE ADDITIONAL LOSSES DESCRIBED IN GUIDELINE NOTE 4.
  - C) RIVETS MAY BE LEFT IN PLACE TO THE EXTENT THAT THEIR NUMBER DOES NOT EXCEED 20% OF CONNECTION RIVETS IN ANY ONE CONNECTION OR 50% OF STITCH RIVETS IN ANY ONE PORTION OF A MEMBER.
  - D) WHERE THE ABOVE PERCENTAGES ARE EXCEEDED THE NUMBER OF RIVETS OVER THE PRESCRIBED PERCENTAGE SHALL BE REPLACED WITH HIGH-STRENGTH BOLTS.
  - E) WHEN SELECTING RIVETS FOR REPLACEMENT TO MEET THE ABOVE PERCENTAGE REQUIREMENTS, THE WORST RIVETS IN ANY GROUP OR CONNECTION SHALL BE SELECTED FOR REPLACEMENT.
- 3. RIVETS (CATEGORY D) NOT MEETING THE REQUIREMENTS OF CONDITION C AT EITHER HEAD SHALL BE REPLACED.

4. REPLACEMENT WILL ALSO BE REQUIRED FOR ANY RIVET EXHIBITING ADDI-TIONAL LOSS IN THE FORM OF PITS OR GOUGES AT THE EDGE OF EITHER HEAD PROJECTING BEYOND THE SHANK WHERE SUCH LOSS REDUCES THE SECTION BELOW THE LIMITS SHOWN FOR CONDITION B.

CONDITIONALLY ACCEPTABLE

- WHERE CREVICE OR INTERFACE CORROSION BETWEEN CONNECTED PARTS IS PRESENT THE RIVETS ADJACENT TO THAT AREA SHALL BE REPLACED AFTER CLEANING BETWEEN THE PARTS REGRADLESS OF THE CONDITION OF THE RIVETS.
- 6. RIVETS REPLACED IN ACCORDANCE WITH GUIDELINE NOTES 1 THROUGH 5 WILL BE PAID FOR UNDER THE ITEMS "RIVET REMOVAL" AND "STRUCTURAL STEEL"
- 7. DIMENSIONS SHOWN ON THESE SKETCHES FOR CONDITIONS B AND C ARE MINIMUM REQUIREMENTS FOR BOTH DRIVEN AND MANUFACTURED HEADS. THE MINIMUM HEIGHT OF HEAD IS MEASURED TO THE CENTER OF THE RIVET. THE MINIMUM DIAMETER APPLIES TO THAT DIRECTION IN WHICH IT IS THE SMALLEST.
- ALL HIGH-STRENGTH BOLT CONNECTIONS SHALL BE ASSEMBLED WITH A HARDENED WASHER UNDER BOTH THE BOLT HEAD AND NUT. WHERE NECESSARY WASHERS MAY BE CLIPPED ON ONE SIDE TO A POINT NOT CLOSER THAN 7/8 OF THE BOLT DIAMETER FROM THE CENTER OF THE WASHER.
- 9. IF REAMING IS REQUIRED TO DRESS UP THE RIVET HOLES, THE COST OF THIS REAMING SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEM UNDER WHICH THE BOLT IS BEING REPLACED. IF AFTER REAMING THE HOLES EXCEED THE TOLERANCES SHOWN IN THE SPECIAL PROVISIONS, THE CONTRACTOR SHALL INSTALL THE NEXT LARGER SIZED BOLT AT NO ADDITIONAL COST

#### STRUCTURAL STEEL REPAIR NOTES:

REGION STATE

1. PRIOR TO COMMENCEMENT OF WORK FOR THE STEEL REPAIRS A MEETING SHALL BE HELD IN THE FIELD BETWEEN THE CONTRACTOR AND THE ENGINEER OR HIS DESIGNATED REPRESENTATIVES TO VERIFY THE LOCATIONS OF THE VARIOUS TYPES OF REMOVAL AND REPLACEMENT.

NEWTOWN

BHZ-6096(I)96-162 1984 816

- THE TYPES, DETAILS, AND DIMENSIONS OF REPAIRS SHOWN ON THE PLANS REPRESENT ANTICIPATED NATURE OF WORK KNOWN AT THIS TIME. HOWEVE THE CONTRACTOR SHALL CALL TO THE IMMEDIATE ATTENTION OF THE ENGI IF. DURING THE EXECUTION OF THE WORK, HE DISCOVERS AREAS OF DETE ORATED STRUCTURE, WHICH WERE NOT UNCOVERED BY THE ENGINEER DURIN THE EXAMINATION OF THE STRUCTURE, OR THE TYPE OF REPAIR IS DIFFE THAN THOSE SHOWN ON THE PLANS. THE ENGINEER SHALL THEN DETERMIN REQUIREMENT AND NATURE OF REPAIR OF THE WORK.
- 3. EXISTING STEEL DESIGNATED TO BE REMOVED SHALL BE TAKEN DOWN BY METHODS AS THE CONTRACTOR MAY PROPOSE, SUBJECT TO THE APPROVAL OF THE ENGINEER. ALL MATERIALS REMOVED AS PART OF THIS WORK SHA BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM
- 4. FLAME CUTTING WILL BE PERMITTED ONLY IF APPROVED BY THE ENGINEER.
  WHERE FLAME CUTTING IS USED IN REMOVING PORTION OF THE EXISTING THE CUTTING SHALL BE DONE BY EXPERIENCED OPERATORS AND IN THE PRESENCE OF THE ENGINEER OR HIS DESIGNATED REPRESENTATIVE THE FLAME SHALL BE ADJUSTED AND MANIPULATED TO AVOID OVERHEATING ADJACENT METAL THAT IS TO REMAIN. ANY EXISTING STEEL, WHICH HAS BEEN DAMAGED BY THE CONTRACTOR'S OPERATION, SHALL BE REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- EXCEPT AS SHOWN ON THE PLANS, USE OF WELDING IN STEEL REPAIRS WILL NOT BE PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE ENGINE
- 6. NEW STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF ASTM A36, UNLESS OTHERWISE SHOWN.
- 7. STRUCTURAL STEEL, WHICH IS TO BE EMBEDDED OR IN CONTACT WITH CON SHALL NOT BE PAINTED.
- 8. RIVETS REPLACED TO PERMIT REQUIRED REMOVAL OF ANY OF THE CONNEC PARTS (WHETHER CALLED FOR ON THE PLANS OR ORDERED BY THE ENGINEE SHALL BE REMOVED AND REPLACED BY HIGH STRENGTH BOLTS. -BOLTS SHALL BE PAID FOR UNDER THE ITEM FOR STRUCTURAL STEEL
- 9. STEEL REPAIRS AND RIVET REPLACEMENT SHALL BE SCHEDULED SO THAT THE DEAD AND LIVE LOADS ARE AT A MINIMUM ON THE MEMBER BEING WOR ON. RIVETS SHALL BE REMOVED ONE AT A TIME. SEE SPECIAL PROVISIONS.
- 10. WHERE NEW STRUCTURAL STEEL IS TO BE ATTACHED TO EXISTING STEEL, THE CONTACTING SURFACES SHALL BE CLEANED TO BARE METAL AND ALL SURFACES, INCLUDING BOLTS, SHALL BE GIVEN ONE COAT OF PRIMER IN ACCORDANCE WITH THE PROCEDURES AS SPECIFIED IN THE SPECIAL PROVI
- 11. ALL FIELD BOLTED CONNECTIONS TO EXISTING STEEL SHALL BE EITHER SUBPUNCHED OR SUBDRILLED AND REAMED TO SIZE AT ASSEMBLY OR DRILL FROM THE SOLID IN ACCORDANCE WITH THE SPECIAL PROVISIONS. OVERS HOLES MAY BE USED IF APPROVED BY THE ENGINEER, BUT EVERY EFFORT SHALL BE MADE TO FIT THE WORK WITH A MINIMUM OF MISMATCH. NO BENDING OR TWISTING OF STEEL WILL BE PERMITTED. IF THE MISALIGN EXCEEDS 1/4" THE NEW STEEL SHALL NOT BE ACCEPTED AND SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AS DETERMINED BY THE ENGI: AT NO EXTRA COST TO THE STATE.
- ALL EXISTING RIVETS, WHICH HAVE BEEN REMOVED FOR THE PURPOSE OF PERFORMING THE REPAIR WORK, SHALL BE REPLACED WITH ASTM A325. TYPE 1. HIGH-STRENGTH BOLTS. ADDITIONAL HOLES IN EXISTING MATER SHALL BE DRILLED IN THE FIELD WITH THE NEW MATERIAL IN PLACE OR FROM TEMPLATES.

INSTALLATION OF BOLTS SHALL BE IN ACCORDANCE WITH THE STANDARD UNDER THE HEAD AND NUT. THE CONTRACTOR SHALL TAKE ALL NECESSAR FIELD MEASUREMENTS TO DETERMINE PROPER GRIP LENGTHS.

REFERENCES:

STRUCTURE SHEET NO.

General Notes\_\_\_\_\_5 General Plans 485
Framing Plan & Steel Repairs 13 Steel Repairs II\_\_\_\_\_14

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF

INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR NO. DATE

WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVES-TIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION

ROUTE 816 - SANDY HOOK BRIDGE

NEWTOWN

OVER

THE HOUSATONIC RIVER

STRUCTURAL NOTES

ENGINEER E. LIONEL PAVLO ENGINEERING CO.

DRAFTER TO DESIGNER WT, JBM CHECKER AK DATE Aug. 3.

STRUCTURE NO. 96-162-1

RIDGE LOS NO. OOEO7

96-193

**S-33** 

04.33

FOR INFORMATION ONLY NOT TO SCALE

**NEWTOWN/SOUTHBURY** 

1984 REHAB BRIDGE **DRAWINGS - 5** 

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED. REVISION DESCRIPTION SHEET NO. Plotted Date: 5/28/2014

STATE OF CONNECTICUT **DEPARTMENT OF TRANSPORTATION** 

Filename: ...\S-33 1984 Rehab Bridge Drawings - 5.dgn



**REHABILITATION OF S.R. 816 OVER HOUSATONIC RIVER BRIDGE NO. 00507** 

